

The Effects of A Movement-Based After-School Music Program  
on Music Underachievers' Musical Achievement,  
Social Development and Self-Esteem

by

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## ABSTRACT

The purpose of this study was to examine the effects of an after-school music program on music underachievers' musical achievement, social development and self-esteem. A true-experimental pretest-posttest design was used and included 14 hours of treatment time. The subjects ( $N = 66$ ), fifth-grade students were randomly selected from the lowest quartile of scores on Colwell's Music Achievement Test (MAT), which was administered to all fifth-grade students ( $N = 494$ ) in three Korean elementary schools. The treatment group ( $n = 33$ ) experienced a movement-based after-school music program (MAMP); the control group ( $n = 33$ ) did not receive the after-school music program. Measurements included sections of Colwell's Music Achievement Test (MAT), Kim's Social Development Scale (SDS), and Hare's Self-Esteem Scale (HSS). The researcher and music teachers of each school administered all measurements. Fourteen treatment lessons occurred over fourteen weeks. One-way analyses of covariance tests were used to test for post-test differences between groups. A significant difference was found in music achievement total scores of the MAT with the treatment group scoring higher scores than the control group. There were no significant differences for interval and meter discrimination tests of MAT. There were no significant differences between treatment and control groups in the post-test scores of the Social Development Scale (SDS) and the Self-Esteem Scale (HSS). However, for both tests, mean scores increased for the treatment group and decreased for the control group. Results from this study suggest that a movement-based after-school music program promotes music underachievers'

musical growth and may also support music underachievers' social development and self-esteem.

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## CHAPTER 1

### INTRODUCTION

Many of the world's major industrialized nations have implemented national examinations in order to assess student academic achievement and evaluate the quality of their education systems. Several nations examine student achievement through specific national assessments: for example, the National Assessment of Educational Progress (NAEP) in the United States, the National Curriculum Assessment (NCA) in the United Kingdom, the National Assessment Programme (NAP) in Australia, and the National Assessment of Educational Achievement (NAEA) in Korea (Jeong, 2009). Some nations compare children's performance and educational outcomes using the Programme for International Student Assessment (PISA), which is a triennial world-wide test of 15-year-old schoolchildren's scholastic performance developed by the Organization for Economic Cooperation and Development (OECD) (Fryer & Levitt, 2009).

Interest in student academic achievement in Korea is increasing, and the Korean government has announced educational goals for underachievers. According to M. S. Kim (1994), the Korean Government first conducted the National Standard Achievement Examination (NSAE) through the Institute for Better Education (IBE) in 1959. At that time, the IBE examined four core subjects—Korean language, arithmetic, social studies, and nature studies—by testing 5% of fifth and six graders in the nation. After several decades, the NSAE changed the collection of assessment data from random sampling to a population

survey in 1997; however, they continued to examine data for a random sample of up to 5% of the student population.

The NSAE introduced a new assessment system in 2008, which is weighted toward five core subjects: Korean language, social studies, mathematics, science, and English (Korean Institute for Curriculum and Evaluation, website). The arts, including music, are not assessed in this new national examination. Currently, the Korea Institute of Curriculum and Evaluation (KICE) reports achievement scores in the five core subjects for students in the sixth year of elementary school, third year of middle school, and first year of high school (KICE, website).

Underachievement or low performance on academic test is viewed as a problem in many nations. In India, for example, student underachievement in traditional school settings has drawn attention from educational and social points of view due to the belief that underachievers squander the nation's resources, cause emotional and learning stress for students, and cause other concerns for their parents and teachers (Vamadevappa, 2006). According to Bernard (1997), underachievers in schools of the United States range from 10 to 30% of the student population in economically advantaged areas, and between 50 to 90% of the population in economically disadvantaged areas. Bernard (2006) also claims that 40% of American school-aged children, more boys than girls, significantly underachieve and fail to realize their potential at school and in other areas of endeavor.

In Korea, studies about student underachievement are being carried out to investigate the reasons children become underachievers, and education programs based on the results of the investigations of underachievement are reflected in Korean educational environments (Chae, 2005). According to Chae (2005), proper education should be provided for children at an early age, particularly for children who are at risk for underachieving at the elementary school level, because remediating underachievement is difficult after students have entered the secondary school level. Due to the current interest in underachievers in all of education including music, Korean educators are attempting to overcome the problem by offering educational programs for underachieving students (Seo et al., 2010).

Chae (2005) suggests three main categories of factors that may be related to student underachievement: intellectual factors, affective factors, and educational environment factors. Ham (2004) also states students may become underachievers not only because of the learners' intellectual, physical, and emotional factors but also because of educational environments, teachers' abilities, and educational policies. Throughout the literature, however, underachievers are generally described as low-achieving students who do not have disabilities that may contribute to lower success. For example, McCall (1994) states that "most studies of underachievers exclude children with known mental or physical disorders, including learning disabilities and hyperactivity, presumably concentrating attention on children who underachieve for motivational reasons"

(p. 15). Definitions of underachiever and music underachiever will be discussed later in this chapter.

Musical underachievement among Korean children has received some attention by researchers. According to M. H. Lee (1996), who studied students' musical abilities in an elementary school in Seoul, Korea, 33% of fourth graders ( $n = 36$ ) cannot sing a major scale, 30% of fourth graders cannot play the recorder, only 22% of fourth graders passed a major-minor discrimination test, and only 17% of fourth graders passed a meter discrimination test. M. S. Kim (2001) states that concern about music achievement in elementary schools is becoming an issue in Korea, and through well-prepared musical experiences and activities, students can develop their abilities. In addition, Kim recommends that music educators should try to establish the causes of underachievement in school music and work to increase students' interest in music achievement.

Music educators in Korea have not systematically investigated the extent of music underachievement, the causes of underachievement, or ways to remediate underachievement. M. H. Lee's (1996) study demonstrates that the individual skills and the ability to read music and play instruments among some Korean students are low, and that research about music underachievers should move forward. Music education teachers and researchers need to offer and investigate the effectiveness of music programs designed specifically for music underachievers.

As an alternative solution to enhancing underachievers' learning in Korea, after-school programs in various subjects (reading, math, etc.) have been offered

to students. In the United States, after-school academic and arts programs provide students with opportunities to develop personal, emotional, and social skills and cooperation with peers, and researchers have found positive relationships between enrollment in after-school programs and academic achievement (Fashola, 1998). In Korea, after-school music programs exist in many schools, and these programs usually focus on playing western orchestral instruments, playing Korean traditional instruments, or choral singing. However, there are no systematic studies of these programs, none of these programs have been specifically designed for music underachievers, and none use the types of music and movement activities included in the treatment for this study.

### **Need for Study**

Studies of academic underachievers, defined as students who have average or above average intelligence and whose course grades are average or lower (Tolor, 1969), have been conducted by educational psychologists and researchers. Studies of music underachievers in the music education field are limited. In Korea, Y. J. Kim (2001) examined the impact of musical environment on third to fifth-grade music underachievers, and M. H. Lee (1996) documented that music underachievers exist, based on his assessment of Korean students' musical abilities. More studies about music underachievers and the effectiveness of programs designed for them are necessary.

This study will help to fill the gap in music education literature by investigating the effects of a movement-based after-school music program for music underachievers. The results from this study may be used to provide

guidelines for music teachers and school administrators as they establish appropriate after-school music programs and support materials for music underachievers. The results of this study may encourage parents and music teachers to consider music instruction programs for underachieving students. Thus, the results from this study may impact music underachievers who receive appropriate movement-based after-school music programs.

### **Purpose of the Study**

The purpose of this study was to examine the effects of a movement-based after-school music program on music underachievers' musical achievement, social development, and self-esteem in Korean primary schools. Research questions were:

1. Is there a significant difference in musical achievement test scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?
2. Is there a significant difference in social development test scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?
3. Is there a difference in self-esteem scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?

While music underachievement may be related to some kind of disability, music underachievers for this study are students who are not physically, mentally, or

emotionally handicapped and who are not identified as musically gifted.

Definitions of underachievement are provided in the next section.

### **Definitions of Terms**

#### **Underachievers**

Before beginning an investigation of music underachievement, it is necessary to establish definitions of underachievers and music underachievers.

Ellis and Bernard (2006) described characteristics of educational underachievement:

A student (who) (a) performs much better on a test of ability than in schoolwork, (b) performs well at one time and then does poorly at another, (c) performs well in some subjects, but does not do well in other subjects, (d) occasionally reveals in what they say or do good academic or creative ability relative to their usual performance, and (e) demonstrates one or more of the following characteristics: low self-esteem, fear of failure, discouragement, lack of confidence, lack of motivation and effort, goals which are too low or too high, poor time management, rebelliousness, and poor study techniques. (p. 311-312)

The Merriam-Webster dictionary defines “underachiever” as “a student that fails to achieve his or her potential or does not do as well as expected” (Merriam-Webster.com). Another dictionary states that “an underachiever is a student who performs less well in school than would be expected on the basis of abilities indicated by intelligence and aptitude tests” (Dictionary.com).



Komatz (1991) states that an underachiever lacks “resolve, persistence, or endeavor and does not meet his or her own expectation or those of others” (p. 4).

Rimm notes:

Underachievement syndrome is a collection of characteristics displayed by children who do not work to their abilities in school. They do not concentrate on school work or show interest. They “forget” or don’t bother to bring in assignments, do not take pride in their work, ignore teachers or argue with them, and are simply not engaged in the school learning process. (in Michael, 1999, p. 203)

Mufson, Cooper, and Hall (1989) define underachievers as:

Students who appear to possess the ability to achieve considerably higher grades than their present records show. The underachievers usually have displayed good or high achievement on several measures of ability, such as the California Achievement Test (CAT) or Wechsler Intelligence Scale for Children; yet their day-to-day school performance is poor. (p. 5)

McCall (1994) states:

An academic underachiever is a student who performs more poorly in school, typically as measured by grade average, than one would predict on the basis of his or her mental or educational ability, often measured by IQ, aptitude, or educational achievement test. (p. 15)

Maclean (1958) states that “an underachieving pupil in high school is one whose grades in courses are well below those expected of one with his measured academic intelligence” (p. 69).

Reis and McCoach (2000) assert:

Underachievers are students who exhibit a severe discrepancy between *expected achievement* (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and *actual achievement* (as measured by class grades and teacher evaluations). To be classified as an underachiever, the discrepancy between expected and actual achievement must not be the direct result of a diagnosed learning disability and must persist over an extended period of time. . . . Gifted underachievers are underachievers who exhibit superior scores on measures of expected achievement (i.e., standardized achievement test scores or cognitive or intellectual ability assessments). (p. 158)

For the purpose of this study, underachievers are defined as students who possess average or above average intelligence, who are not physically, mentally, or emotionally handicapped, and who perform lower than expected in academic tasks or measures.

### **Music Underachievers**

The term “music underachievers” does not appear in the dictionary, however, the meaning of music underachievers is consistent with the definition of underachievers cited above. Music educators describe music underachievement relative to their own studies and expectations of musical ability. Music achievement, as defined by Radocy and Boyle (2003), relates “to specific musical accomplishment, often the result of specific instruction” (p. 385). Kirchhubel (2002) defines music achievement as that “which has been learned or acquired

through training, and is highly valued by teachers, students, and parents” (p. 9). George and Hodges (1980) state that performance skills, factual information, or understanding of musical notation may be considered as components of music achievement.

Relative to underachievement in music, M. S. Kim (2001) states that “music underachievers are students who have poor musical learning capability” (p. 169). Ham (2004) suggests that learning disabilities caused by physical disability have been a contributing factor to music underachievement. However, Ham also states that music underachievers are students who lack:

. . . basic learning skills and performance in music and who do not reach the national standard of music curriculum in Korea. Specifically, music underachievers are students who are not physically handicapped and who do not have musically gifted talents, and students (who) . . . lack understanding of musical concepts, notation, singing, and playing instruments. These students are also influenced by factors of environments or . . . other similar factors. (p. 258)

For the purposes of this study, music underachievers are defined by the researcher as students who have a normal intelligence and who are not physically, mentally, or emotionally handicapped, and who are below average in music learning or the lowest quartile of a standardized music achievement test.

### **Delimitations**

The study is limited by the inclusion of elementary school students from three schools in two metropolitan cities in Korea. The study includes only fifth-grade students. The treatment period consists of 14 weeks, with one 50-minute session per week of instruction in an after-school music program. Long-term effects are not within the scope of this study. The study is further limited by the test instruments selected. These instruments are described in chapter 3 of this dissertation.

## CHAPTER 2

### REVIEW OF LITERATURE

This review of literature includes policies about after-school programs in the United States and Korea, and studies of underachievers and music programs, social development and music activities, and self-esteem and music activities. A section on music movement is also included.

This chapter concludes with studies that describe Korean parents' attitudes toward after-school programs and Korean music specialists' attitudes toward music underachievers.

#### **After-School Programs**

##### **United States**

After-school programs have historically offered American students constructive activities during after-school hours. Nash and Fraser (1998) state that "after-school" includes summer vacations, school holidays, and early release days, and the hours beginning when a child is dismissed from school and lasting until about 6:00 pm. According to Halpern (2002), the purposes of after-school programs include "protection, care, opportunity for enrichment, and play" and, often simultaneously, "socialization, acculturation, training, and problem remediation" (p. 2). While some after-school programs have concentrated on academic benefits and offer tutoring or other forms of academic assistance to youth, the Harvard Family Research Project (2003) emphasizes that after-school programs can improve young people's personal and social development.

According to the Institute of Education Sciences (IES) (2009), various after-school programs can be found in the United States, including extended day care programs, academic instruction/tutoring programs, and 21<sup>st</sup> Century Community Learning Centers. Students clubs, defined as school-sponsored extracurricular activities, are not included in their list of formal after-school programs. The IES (2009) describes the types and purposes of various after-school programs:

Fee-based stand alone day care programs refer to after-school day care for which parents paid fees. These programs operate primarily to provide adult supervision for students after school, although the programs may incorporate homework help, recreational activities, and cultural enhancement activities such as arts and crafts. (p. 1)

Stand-alone academic instruction/tutoring programs focus exclusively on academic instruction or tutoring to improve student performance in core academic subject areas such as math, reading, and science. Programs include the Supplemental Education Services (SES) in schools that did not make Adequate Yearly Progress (AYP), other stand-alone programs that focus on improving academic standards of students who are at risk of school failure, and programs that may provide additional academic exposure for students who are doing well in school. (p.1)

The 21<sup>st</sup> Century Community Learning Centers (21<sup>st</sup> CCLCs) are administered through the federally funded 21<sup>st</sup> CCLC Program to provide academic enrichment opportunities, including instruction in core academic

subjects and a broad array of enrichment activities, to complement regular academic programs. These broad-based after-school programs have a core academic component and additional components in areas such as art, music, drama, technology education, and counseling. (p.1)

Other types of formal stand-alone or broad-based after-school programs include a variety of stand-alone and broad-based after-school program that do not fit into the above-named categories. For example, some broad-based programs may be former 21<sup>st</sup> CCLCs that continue to offer the same kinds of services, often as fee-based programs. Examples of stand-alone after-school programs other than fee-based day care and academic instruction/tutoring programs include those that focus exclusively on topics such as fine arts or violence prevention. (p. 2)

After-school programs in the United States first emerged during the last quarter of the nineteenth century when small boys' clubs opened in churches or local community buildings (Halpern, 2002). According to Reisman (2005), the proportion of the population between the ages of 5 and 17 had increased rapidly during the 1920s, and children, particularly those living in cities, were perceived as being out on the street and defenseless during after school hours. Nearly a century later, children's welfare during after school hours is still a concern. Gayl (2004) reported that many juvenile crimes take place from 3:00 to 6:00 p.m., and American teenagers may be particularly at risk for encountering environments that included drugs, alcohol, cigarettes, and sexual crimes during those hours.

Halpern (2002) states that “the first after-school programs were developed by individual men and women intent on rescuing children from the physical and moral hazards posed by growing up in the immigrant neighborhoods of major cities” (p. 180). Similarly, Gayl (2004) states that the YMCA and Boy Scouts of America organized after-school programs for students, and other outside-of-school programs emerged in local school districts for low-income students. Posner and Vandell (1994) suggest that schools and communities support after-school programs and activities not only to encourage students’ academic achievement and social adjustment but also to increase youth attachment to school.

During the 1990s, states such as California, Georgia, and Delaware started after-school programs to provide safety for children and to improve academic performance (Oakley, 2008). During his terms as President of the United States (1993-2001), Bill Clinton strongly supported after-school programs as a safe haven for youth and an environment where academic achievement and personal development can be encouraged. Pederson, Kanter, Bobo, Weing, and Noeth (1999) described monetary support and purpose of these programs; the intention was to:

. . . make sure that every child has a safe and enriching place to go after school so that children can say no to drugs and alcohol and crime and yes to reading, score, computers, and a brighter future for themselves.

(p. 5)

The U. S. federal government passed the 21<sup>st</sup> Century Community Learning Centers Act (21<sup>st</sup> CCLC), which provided support for after-school programs and



provided financial resources for communities to operate these programs (U.S. Department of Education, 2003).

The U.S. Department of Education stated:

The purpose of the program is to establish or expand community learning centers that provide students with academic enrichment opportunities along with activities designed to complement the students' regular academic program. (p. 5)

According to Collum (2003), 21<sup>st</sup> CCLC programs in all 50 states served 1.2 million children in over 7,500 schools. Over the lifetime of the CCLC act, programs provided mentoring, homework help, and academic enrichment, as well as art, music, recreation and a variety of other activities. The No Child Left Behind (NCLB) legislation changed the focus of the 21st CCLC programs to an emphasis on student achievement. NCLB expanded the academic enrichment opportunities for children who are attending low performing schools (U.S. Department of Education, 2003).

The National Endowment for the Arts (NEA) is committed to advancing arts learning in United States. According to Otterbourg (2000), the NEA supports several after-school arts programs, such as:

Visual arts workshops in community centers, creative writing programs in YMCA, student-created exhibitions on local history, summer dance camps, opera programs, folk arts classes, a young professional conductors program, museum volunteer training programs for senior citizens and

young students, and collaborative cross-generational events including workshops, performances, exhibits and oral history projects. (p. 28)

The Afterschool Alliance (2005) suggests that well-designed after-school arts and music programs can reinforce student learning and “help strengthen teamwork, responsibility, persistence, self-discipline, and presentation skills” as well as “promote learning in core subjects such as reading, writing and math” (p. 1).

After-school arts programs in music that are sponsored by school districts may include instruction in the areas of piano, voice, guitar, brass and string instruments, and drama and theatre (Omaha School of Music After School Music Education Program, 2008). While studies of after-school music programs suggest that such programs may be especially beneficial for at-risk children (Fiske, 1999; Otterbourg, 2000; Taylor, Barry, & Walls, 1997; Weitz, 1996), arts programs that occur outside of the school day can also be controversial. Colwell (n. d.) noted that both arts and non-arts organizations conduct after-school arts programs aimed at various purposes, such as:

to provide a balance to remedial programs in the more basic subjects that are offered after school; to provide a safe environment for that time period between the end of the school day and when parents are at home; and to free up the basic curriculum by avoiding the interruption for music class after-school.

In some cases, after-school arts programs become controversial when they replace school music programs. As Colwell suggests (n. d.), “These multiple offers of

assistance from the local community are difficult to reject; they cost the schools nothing . . . and administratively count as part, or all, of the music program.”

In its position statement on after-school arts programs, the National Association for Music Education (NAfME, formerly MENC) identifies two types of after-school music programs: those offered in place of music classes that are a part of the regular school day, and those offered as enrichment beyond the regular school day (MENC, 2005a). While the NAfME position statement recognizes that after-school music programs offer effective learning experiences and may “help some students overcome the obstacles of disadvantaged backgrounds,” concerns remain. NAfME suggests:

An after-school music program that includes such activities as tutoring and mentoring, homework help, academic enrichment, skill development and community service opportunities may support student learning and development. In no way can after-school music replace the standards-based, measurable goals established by a highly qualified certified professional. Activities in this type of program may help to expand and enrich a well-designed music curriculum, but they cannot duplicate or replace one. (MENC, 2005a)

NAfME also suggests in the same policy statement that after-school music programs “should offer the children a certain amount of self-direction and the freedom to pursue their own musical interests.”

## **Korea**

After-school programs provide a wide array of benefits to children, their families, schools, and the whole community. However, policies and philosophy in the United States and Korea regarding the purposes of after-school programs differ. Contrary to the diverse purpose of American after-school programs, Mo (2008) identifies three social purposes of Korean after-school education activities: First, after-school educational activities are needed improvements to reduce private education expenditures. Second, plans for solving the educational gap and relaxing social polarization between families who have different opportunities are needed, and after-school programs can help. Third, education services are required for children whose parents are working. A brief history of after-school programs in Korea in the past two decades follows.

The After-School Education Activity policy was part of the “5.31 reform of the educational system” established by the Educational Reform Deliberation Committee in the civilian government of President Kim Young Sam (1993-1997) in May, 1995. The next year, plans for the After-School Education Activity were implemented as a policy of the Korean Ministry of Education. In 1999, the title of the After-School Education Activity was changed to “Specialty and Aptitude Education” by the people’s government of President Kim Dae Jung (1998-2002). After 2000, private education related to core subjects penetrated into Specialty and Aptitude Education activities and emerged as a social problem due to expense. Finally, the former Korean government of President Roh Moo Hyun (2003-2007) selected “2.17 Reduction of Private Education Expenses” as a solution in 2004.

After “2.17 Reduction of Private Education Expenses,” the name of after-school programs changed to “Supplementary Self-Regulating Study” in April 21, 2004, and the Korean government began to use the name of “After-School Program” in November of the same year (Mo, 2008).

In the case of Korean after-school programs as an education system, various programs have been offered to students, such as the development of the talent-aptitude program, the core subjects program, the lifelong education program, the neighboring schools cooperation program, and the after-school child care programs (H. Y. Kim, 2010). More information about these programs is provided below.

The education for talent-aptitude development program is offered for elementary and secondary students. It includes the development of talent and aptitude in core subjects (Korean language, Math, Science, English, etc.), computer (word processor, Internet, etc.), physical training, and the arts including music (composition, instruments, voice, etc.) and painting (Korean painting, calligraphy, cartoon., etc). Connectivity and continuity are also emphasized (J. J. Kim, 2008).

Many schools prefer after-school programs that emphasize the core subjects such as Korean language, Math, English, Science, and Social Studies. Lifelong education programs offer various classes to local community people and adolescents. In addition, after-school programs have included gifted and talented education, nature education, the information literacy program, and the creative

education program. Recently, after-school cyber education programs were introduced to students (E. K. Lee, 2008).

In 2005, several after-school programs were developed and implemented in 48 research schools. In 2006, the Korean Ministry of Education integrated all after-school education activities and completely supported them in 280 model schools. In 2007, the number increased to almost 700 model schools through a new policy of “Solution and Plan (to address) Educational Polarization” (S. M. Kim, 2007).

In many elementary schools in Korea today, music talented-aptitude education as an after-school music program provides musical activities to students. These kinds of programs began in 2006. The music talented-aptitude programs are usually comprised of learning western instruments such as the flute, the clarinet, or violin. In the present day, after-school music programs depend on the school districts, but elementary schools provide music talent-aptitude development programs in one of three formats: western music instruments, or Korean traditional instruments, or choir.

### **Underachievers and Music Programs**

No studies that examine after-school music programs designed specifically for music underachievers were found in the research databases consulted for this study. Studies were located that examine the effects of music programs and musical activities for children with learning disabilities, for children who have lower academic performance, and for at-risk students. In other words, this study is unique in that it examines music underachievement, not academic low

performance. The populations or sample sizes were generally small in the studies identified in the literatures, which are summarized below.

M. H. Lee's study (2005) consisted of five fourth-grade students who were selected through school academic scores, the Korean version of Wechsler Intelligence Scale for Children (KEDI-WISC, 1974), and the 3Q test (Personality, Intelligence, and Emotional Quotients). Lee's study was conducted during 7 weeks at H elementary school in Pusan, Korea. Eleven music activities were provided in 19 sessions, and each session lasted for 40 minutes. Lee reports the "making music program" mediated behavior of poor progress students and improved students' self-confidence and completion motivation.

I. H. Kim (2002) investigated the effects of a music program for four fifth-grade students who had low school academic achievement at N elementary school in Sacheon, Korea. The purpose of the program was to improve students' attention, as measured by Conner's test for Attention Deficit Disorder (revised by the researcher) and the Concentration Test from the Ministry of Education in Korea (1991). The study was conducted for 15 weeks and a total of 30 sessions. After school, individual students were trained on concentration ability using a music program, gradually increasing activity from 5 to 10 minutes up to 30 to 35 minutes. Kim reported that using a music program may help to improve the concentration ability of students with learning disabilities.

C. S. Lee (2008) investigated the relationship between the attention and task performance abilities of children with learning disabilities. The four subjects were third-grade students who participated in an after-school music therapy

program. The treatment consisted of musical activities that occurred in 50-minute sessions; 16 sessions were conducted during 2 months in K elementary school in Seoul, Korea. Lee found that the after-school musical activities had a positive impact on the task performance abilities of the students with learning disabilities.

I. S. Nam (2002) examined the effects of group Korean traditional music activities on self-respect and relations with classmates among underachievers. The subjects were sixteen fourth-grade underachievers who enrolled at W elementary school in Dague, Korea. The experimental group took part in Korean traditional music activities and the control group did not take part in the program. Nam concluded that the Korean traditional music activities have a significant impact on the relationships between classmates and underachievers.

Cho (2004) examined the impact of a music program on the self-image of youth who have learning slowness. The music program was designed for three male students enrolled at elementary and middle schools in Seoul, Korea, with the purpose of improving their self-image. The music program was conducted three times a week for 50 minutes a session for a total of 12 sessions. The students were selected using the Korean Aptitudes Institution Self-Image (KAIS) test and the Sungsin Self-Image (SSI) test. Cho found that the students' self-images were positively improved by the music activities.

Wee (2008) studied the effects of a song-guidance program on underachieving students' vocabulary ability. Participants in the study were two fourth-grade underachieving students in G elementary school in Uiseong-gun, Korea. The Korean Wechsler Intelligence Scale for Children test (K-WISCIII)



and the KEDI test (Individual Basic Learning Skills) were used for this study.

Wee concluded that the song-guidance program was effective in improving vocabulary concepts for underachieving students.

A few studies about the effects of after-school music programs state that such programs can be especially beneficial to at-risk students. In the U. S., Koster (2010) investigated the effects of an after-school music program on at-risk youth student motivation and academic achievement. The participants in this case study were sixth- through eighth-grade students who were selected to participate in the after-school music program. The total population was twenty-eight students. Koster's case study showed that after-school music programs in urban areas can help to increase student motivation and academic achievement, and Koster suggests that these results can benefit educators who wish to develop after-school programs for at-risk students.

### **Social Development with Music Activities Studies**

Social development in children has to do with the development of social relationships with parents, care givers, peers, and others in the culture. In a three-year study of 2,269 secondary school students in the United Kingdom, Harland et al. (2000) found that personal and social development are among the perceived positive outcomes for pupils derived from engagement with the arts in schools. The impact of participation in music on social development has been investigated in various ways, most typically through self-report such as interviews and questionnaires.

The music industry, specifically the Gemeinhardt Company, sponsored two survey studies in the 1980s that examined reasons that different groups support school music programs. In the first study (Brown, 1980), 95% of parents who did not have children in school band believed that the school band program provided educational and social benefits. The band directors surveyed in the study included sense of belonging and social development in a long list of potential benefits of participation in band. In the second study (Brown, 1985), non-band parents and students as well as drop-out band students and their parents strongly agreed with the statement that participation in band builds self-esteem, self-confidence, and a sense of accomplishment.

Other researchers have noted the relationship between music learning and social development in studies that examine classroom music engagement. For example, Wiggins (1994) reported that interaction with peers is a key to solving musical problems in small group composition lessons, and “social interaction is seen as an essential ingredient in the learning process” (p. 233). Similarly, Beegle (2010) found that social relationships with peers were reflected in fifth-grade children’s improvised music.

Hanshumaker (1980) conducted a review of literature of the effects of arts education on intellectual and social development. Among the findings, Hanshumaker reports that “Arts instruction has a significant positive effect on basic language development and reading readiness” (p. 23), particularly instruction using the Kodály method. Hanshumaker also reported that “Arts activities foster positive attitudes toward school and the general curriculum,

resulting in lowered rates of absenteeism and tardiness” (p. 23). Further, he found that “Arts education positively influences social development and personal adjustment” (p. 24).

In an extensive synthesis of empirical research literature, Hallam (2010) reviewed the effects of active engagement with music on the intellectual, social and personal development of children and young people. Studies indicate that “success in music can enhance overall feelings of confidence and self-esteem, increasing motivation for more study” (p. 278). While effects related to social cohesion, development of friendships, and sense of belonging have been reported, Hallam concluded “Engagement with music can enhance self-perceptions, but only if it provides positive learning experiences which are rewarding” (p. 282).

T. H. Kim (2006) examined effects of cooperative recorder activities on the improvement of self-esteem, self-confidence and sociality in elementary school students in Daejeon, Korea. The experimental group was 45 (22 male and 23 female) sixth-grade students, and the control group was 47 (23 male and 24 female) sixth-grade students. For this study, the researcher used recorder activities in Hyeon Kyeong Sill’s “Airship’s Travel Recorder Book” (2001). Kim found that cooperative recorder activities reinforced students’ intrapersonal and interpersonal self-confidence, and also tended to raise students’ sociality.

Shin (2009) analyzed the effect of group music activity on self-esteem and sociality in a treatment that used group music activities for 16 weeks. The subjects were 30 fifth-grade students in H elementary school in Ulsan, Korea. The experimental group ( $n = 15$ ) and the control group ( $n = 15$ ) were randomly

selected for this study. Shin used two tests, a sociality test by Jung Bum Mo (1971) and Coopersmith's Self-Esteem Inventory (1967). Shin found a difference in level of sociality between experimental and control groups. Shin concluded that group music activities were effective in improving the level of sociality of pupils in elementary schools.

### **Self-Esteem with Music Activities Studies**

Self-esteem has to do with an individual's positive or negative assessment of the self or self-worth. Historically, William James (1890) described positive self-esteem as an individual's tendency to feel good about himself. Coopersmith (1967) defined self-esteem as the judgment or evaluation an individual makes of himself and claimed that self-esteem is related not only to early home environment but also to achievement, including skill development. Coopersmith stated that the effects of different parental expectations are important, and parents with high self-esteem encourage superior achievement in their children. Cigman (2004) makes a philosophical argument that "both achievement and the sense of belonging are bound up with self-esteem" (p. 103); low self-esteem or a feeling of "I can't" can be crippling to children, and attention to children with low self-esteem is important in education. Smith (2002) suggests that students' self-esteem forms indirectly during the learning process through achievement and through teachers' praise and positive comments.

Today, student self-esteem is seen as related to the academic and personal success of students. In a review of literature, Baumeister et al. (2003) state that self-esteem is positively correlated (though weakly) with academic performance.

Baumeister et al. suggest that good performance in school may lead to higher self-esteem rather than the other way around and that self-esteem “overlaps” with other variables (p. 14). They “encourage linking self-esteem to learning and improvement” (p. 39), which may also benefit society. They state:

A focus on improvement, in particular, allows people to compare themselves against themselves so that they do not have to boost themselves at the expense of others. Improvement strikes us as the ideal condition for boosting self-esteem: As the person performs or behaves better, self-esteem is encouraged to rise, and the net effect will be to reinforce both good behavior and improvement. Those outcomes are conducive both to the happiness of the individual and the betterment of society. (p. 39)

Kristjánsson (2007) uses the term “justified self-esteem” to describe students’ ability to set appropriate goals, assess their own achievements correctly, and experience satisfaction in their achievements in a specific domain.

Kristjánsson suggests that teachers should “help promote a domain-specific self-esteem, because a global self-esteem turned out not to be significantly correlated with important educational variables and because there are many facets of students’ lives that properly lie outside of school” (p. 258). According to Kristjánsson, teachers should help their students establish reachable goals for successful achievement that can lead to a justified self-esteem.

Schmidt and Padilla (2003) used longitudinal data set to examine the relationship between self-esteem, family challenge (meaning a supportive and

challenging environment), high school grades, and extracurricular involvement for 330 adolescents. The researchers found a relationship between levels of self-esteem and academic achievement, and their “results suggest that achievement may precede self-esteem” (p. 44). They caution that this result may be particular to the adolescent age group they studied (10<sup>th</sup> to 12<sup>th</sup> grade). Their study did not produce significant findings for extracurricular participation and self-esteem, which may be related to the global measure used.

Michel and Farell (1973) conducted a study to investigate music and self-esteem in an all-black elementary school. The subjects were 14 boys in an experimental group and 14 boys in the control group. In the first phase of the study, the boys in the experimental group received 15 sessions of ukulele lessons over seven and-a-half weeks. The boys were given an opportunity to earn points to obtain their own ukuleles. In phase two, the researcher rewarded the boys’ attention span with tokens that they could exchange for private instruction on their ukuleles. The researchers found no significant difference on measures on self-esteem, behavior ratings of teachers, or attention span. However, the boys’ time on-task commitment improved more than 10%.

Trusty and Olivia (1994) describe self-esteem as a component of self-concept. They reviewed early studies of the effects of arts and music education on self-concept and examined studies that showed measurable results in the areas of emotional and social development of children. They found some evidence of a relationship between music participation and self-concept. Participation in arts

activities, such as dance classes and private instrumental lessons, appeared to have a positive influence on self-esteem.

In a study that used songwriting as a tool to help improve self-esteem for 11 teenage survivors of sexual abuse, Clendenon-Wallen (1991) designed songwriting activities to facilitate appropriate expression of anger; to explore personal boundaries, trust, and sexuality; and to develop problem-solving skills. Participants who gained musical and compositional skills discovered their own creativity, thus improving their self-esteem. Clendenon-Wallen explained that music and songwriting may be an effective therapeutic treatment in clinical settings with groups who have low self-esteem.

Several studies showed positive correlations between participation in choir, band, or formal music instruction and self-esteem, and music educators have described the effect of participating in music as a positive feeling. Nolin and Vander Ark (1977) found that ninth-grade band and choir students had significantly higher self-esteem scores than non-music students as measured by the Coopersmith Self-Esteem Inventory (1967). A study comparing the effects of a keyboard learning approach and a traditional general music approach on sixth grade students was reported by Wig and Boyle (1982). They investigated general music students' music achievement and attitudes toward music including attitudes about themselves. The result of the music attitude survey showed that the experimental subjects had more positive attitudes about their own music abilities and creativity. The students' responses indicated that they enjoyed the keyboard experience.

In the study of self-esteem with piano instruction, Costa-Gioma (2004) examined a sample of 117 fourth-grade children who never participated in formal music instruction. Sixty-three students participated in an experimental group that received piano instruction, and 54 students were in the control group. The participants were administered five tests of self-esteem, academic achievement, cognitive abilities, musical abilities, and motor proficiency at the beginning and after three years of piano instruction. The results of Costa-Gioma's study indicated that the children who completed three years of piano instruction showed significant changes, especially in the development of self-esteem, more than the children who never participated in piano instruction or who dropped out of the lessons.

Austin (1988) examined the effect of two music contest formats on the music achievement, self-concept, achievement motivation, performance achievement, and attitude. The study randomly assigned 44 fifth- and sixth-grade band students. Austin indicated that music self-esteem was higher for females and that music self-esteem scores were a significant predictor of participation in out-of-school or in-school music activities.

Payne (1990) investigated the beliefs of selected school personnel concerning the value of music in the public school curriculum. Payne used a survey instrument to gather data. A total of 250 responses were collected from the total sample population of 400 through the *Ohio Music Education Association (OMEA) Directory*. Payne found that principals and school board presidents



selected statements regarding the development of self-esteem as the most accurate statements in describing the value of music education.

Kennedy (1998) investigated the effects of guitar training coupled with singing on self-efficacy and self-esteem of at-risk students. Forty-five eight- to nineteen-year-old at-risk boys participated in this study. Five groups were formed: performance only, performance and cognitive strategy, cognitive strategy, vicarious, and control group. All groups received 30 minutes of guitar instruction once a week. All groups except the control received 30 minutes a week of additional instruction that varied depending on the group. The Rosenberg Self-Esteem Scale (RSES) and a musical self-efficacy (MSE) measure were given as pretest and posttests. Result shows that scores of performance and performance and cognitive groups improved significantly, suggesting that music performance can be used to improve self-efficacy.

Draves (2008) examined the relationship between music achievement, musical self-esteem, and music aptitude. In Draves's study, 20 students who enrolled in a songwriting course in a university and who were non-music majors took a 50-minute listening/analysis lesson once a week and an 80-minute songwriting workshop twice a week throughout one semester. Draves used Gordon's Advanced Measures of Music Audiation (AMMA) and a Self-Esteem of Musical Ability (SEMA) survey for the study. Draves reported several significant relationships between music achievement, self-esteem of musical ability, and music aptitude for the subjects from the songwriting class.

Austin (1990) examined the relationship of music self-esteem and music activity participation among upper elementary students. Two-hundred-fifty-two fifth- and sixth-grade students enrolled in 13 elementary schools participated in this study. All schools provided two sessions of music instruction per week, 30-40 minutes per meeting. In this study, the Self-Esteem of Music Ability (SEMA) scale and a questionnaire related to grade, gender, and degree of participation in in-school and out-of-school music activities were administered. Results indicated that students with higher levels of music self-esteem tended to participate in a greater number of music activities.

Michel (1971) reported two studies which were designed to determine whether playing popular music instruments, such as rhythm guitar, influenced the self-esteem and academic achievement of disadvantaged Black students. In the first study, 10 seventh- and eighth-grade students were selected based on lowest reading scores. Students participated in a guitar course for three weeks. Fifteen students served as a control group. The Coopersmith Self-Esteem Inventory (SEI), Behavior Rating Form (BRF) (Coopersmith, 1967), and the Spache Diagnostic Reading Scales (SDRS) (Spache, 1963) were administered by teachers. Eight of ten students completed the treatment. Results showed significant gains in self-esteem scores in the instruction group. There was no significant change in self-esteem for the comparison group. The second study examined the effect of automated rhythm guitar instruction for 15 twelve- to fifteen-year-old students who had severe academic and learning disabilities. The study lasted for four weeks. The same instruments, SEI and BRF, were used for study. Michel (1971)

noted that “guitar instruction as offered in the study with its specific population was reinforcing to the students for increased academic effort and achievement” (p. 23).

Vander Ark, Nolin, and Newman (1980) examined relationships of music attitude, self-esteem, and social status in students from grades three through six. A total of 5,642 students in third, fourth, fifth and sixth grades in 16 elementary schools from a suburban, midwestern city were subjects for this study. The instruments used for this study were Nolin’s Musical Attitude Inventory and Coopersmith’s Self-Esteem Inventory (SEI) (1967). The researchers found that as grade level increased attitude toward music declined. They also found that middle social status students had higher attitude scores than low and high social status students.

### **Movement and Music**

Music has long been recognized as important in the lives of children, and elementary music teachers have used a variety of ways to engage children in music, including movement. Movement and music are naturally connected. Shehan (1990) states that “the ear, the muscles and the brain are inherently related in their functions as receivers and conveyers of musical sound, and thus, they play important roles in the training of musicians, and in the music learning of children” (p. 354). Shehan also notes that:

. . . movement is integral to a child’s musical experiences. The physical self is vital to music learning; the body is an important pedagogical tool.

As music flows in time, children are triggered into movement. The key to

the successful music education of children appears to rest heavily in the arena of movement. (pp. 363-364)

In an essay on music and motor skills, Wade (1990) notes that “movement is a fundamental aspect of almost everything we do, in an endless variety of contexts and places, and is accomplished with varying levels of skill” (p. 157). Houlahan and Tacka (2008) report that movement through singing games, instrument playing, musical activities, and folk dancing are important for the musical development of children.

Movement is an important component of the three twentieth-century pedagogies derived from the work of Zoltan Kodály, Carl Orff, and Emile Jaques-Dalcroze. Landis and Carder (1990) state that eurhythmic movement to music in the Dalcroze method supports children becoming aware of the expressive possibilities of their bodies and helps them to develop musical expression. In the Orff approach, movement is fundamental to music learning of all children, and includes natural actions and response in to music. In the Orff process, “movement and improvisation foster greater self-awareness and help the child to actualize his or her expressive potential” (Landis & Carder, 1990, p.119). Through movement children learn the basic concepts of music. In the Kodály method, singing and movements occur simultaneously in singing games and in patterned folk dance.

In a summary of these three pedagogies, Choksy, Abramson, Gillespie, Woods, and York (1986) note that “all aspects and elements of music from Dalcroze are learned first through movement” in Jaques-Dalcroze’s approach (p. 337). In the Kodály method, rhythmic movement that occurs with nursery songs

and rhymes is followed by traditional singing games of childhood and later folk dances. Finally, they note that “free, inventive, and uninhibited movement is one of the foundation of the Orff process” (p. 337).

Forsythe (1977) investigated elementary students’ attending behavior in the music classroom. Findings indicated that elementary students are more on-task in music class when activities involve active participation, including movement. Cheek (1979) found a significant difference in self-concept for fourth-grade students who received movement experiences as part of their music instruction compared to those who did not. Results suggest that movement included in instruction can enhance self-concept. Rogers (1990) points to evidence that various musical experiences in early childhood may result in increased musical development in those children. Merrifield (2006) claims that simultaneous singing and moving builds neuronal connections in a child’s brain. Merrifield also states that working together to play singing games helps children learn how to interact with others and how to be a part of a social group.

Movement activities have been used to teach musical skills and concepts. Some evidence exists that suggests that movement instruction helps students to understand musical concepts and develop music skills (Jones, 1992; Martinovic-Trejgut, 2010; Schmidt & Lewis, 1987). Jones (1992) found that movement activities related to meter helped fourth- and fifth-grade students identify and conceptualize meter in music, and that movement-based activities significantly improved perception of tempo for fourth-grade students. Martinovic-Trejgut (2010) found that movement instruction significantly enhanced memorization and

retention of text, rhythm and pitch among first-grade students. O'Leary (2010) reported positive effects of motor movement on elementary band students' music and movement achievement. The subjects were fifth-grade students in four treatment groups and one control group. Students in foot tapping, stepping, and swaying groups achieved the highest music performance scores. The results indicated significant difference among the groups. O'Leary suggests that movement can enhance rhythm in elementary band.

Common conceptions of the school environment suggest that children are asked to sit in chairs behind desks and remain still while learning in the regular class setting. In Korea, the circumstance of music in elementary schools may not differ greatly from the regular classroom. Sometimes, children sit in their classroom desks and learn singing, music reading, and playing of instruments such as recorders because there is no music classroom, and music specialists must teach in regular classroom. Sometimes, when there is a music classroom, music specialists may still use chairs and may not know how to include movement in the music class.

Movement is important in the music learning of children. Designing the treatment for this study involved selecting appropriate movement activities and designing lessons that were appropriate for the fifth-grade participants and for music underachievers.

#### **Korean Music Specialists' Attitudes toward Music Underachievers**

Im (2009) states that the after-school music programs can help students to cultivate positive emotions when students are involved in collective activities,

resulting in improved sociality and sense of collaboration. However, in a survey study, Im found that most music teachers assumed indifferent attitudes toward after-school music programs while principals showed higher interest.

Prior to this study of the effects of an after-school music program for music underachievers, an exploratory was conducted to investigate how Korean elementary music specialists think about music underachievers and what kind of preparation they have to work with music underachievers (Yun, 2010). The researcher constructed a questionnaire for Korean music specialists. The questionnaire consisted of 32 questions about music underachievers, the school environment, and teachers' knowledge and preparation. The researcher sent the questionnaire to 20 elementary music specialists in twenty different schools and received 16 responses (80%).

This exploratory study showed several important results. First, all music specialists answered that there are music underachievers in their schools, but they did not know how many and what percentage. None of the music specialists had any certification related to pedagogies such as Orff, Kodály, and Dolcroze. Only three schools had Orff instruments and eight schools had their own music classroom. Ninety-three percent ( $n = 15$ ) of music specialists reported that music underachievers should have an opportunity to participate in a specialized music program, and 56% ( $n = 9$ ) of them said that the best program for music underachievers is a music program after school hours.

Korean music specialists in the preliminary study reported that they know who music underachievers are in their classrooms and can identify them, but they

do not have enough time to assist them with normal students in the same classroom and had no special preparation related to music underachievers. Korean elementary school specialists lacked the kind of pedagogical preparation that is part of the after-school music program investigated in this dissertation. Also, most Korean elementary schools lacked the kind of musical equipment used in the after-school treatment program provided in this dissertation.



## CHAPTER 3

### METHOD

The purpose of this study was to examine the effects of a movement-based after-school music program (MAMP) on music underachievers' musical achievement, social development, and self-esteem in Korean primary schools. The methods and procedures used in this study are described in the following sections: research design, setting and subjects, treatment, instruments, research questions and hypotheses, and analysis.

#### **Research Design**

The research design is a true experimental pretest-posttest control group design using random assignment (Campbell & Stanley, 1963). Dimitrov and Rumrill (2003) state that “pretest and posttest designs are widely used in behavioral research, primarily for the purpose of comparing groups and/or measuring change resulting from experimental treatments” (p. 159). According to Campbell and Stanley (1963), the pretest-posttest control group design controls for multiple internal threats to validity including history, maturation, testing, instrumentation, regression, selection, mortality, and interaction of selection and maturation. The dependent variables measured in this study are music achievement, social development, and self-esteem, and the independent variable is experimental group (treatment and control). Descriptive data related to gender (males and females) and schools (A, B, and C elementary schools) will also be reported but will not be treated as independent variables.

### **Setting, Subjects, and Random Assignment**

Students from three elementary schools located in the city of Daejeon and the province of Chungcheongnam-do, Korea, were the subjects in this study. For protection of school names and student identities, the three elementary schools are designated as A, B, and C in this study. At the time of the study, school A had 30 teachers, including one specialist music teacher, and 550 students. School B had 77 teachers, including two specialist music teachers, and 1,457 students. School C had 37 teachers, but no specialist music teachers, and 617 students. All schools had regular music classes in their curriculum; classroom teachers rather than specialist music teachers taught students in school C.

The treatment for this study was a movement-based after-school music program (MAMP) for music underachievers designed by the researcher. After-school programs in Korean elementary schools typically start after regular classes close, and many fifth-grade students (in Korea approximately 12 years old) attend after-school programs of various kinds every day from 2:40 pm to 4:30 pm. The three schools in this study already had various after-school programs, including music programs in which students learned how to play traditional Korean instruments and western orchestral instruments, sing in the school choir, and participate in singing contests; however, none of the schools had a movement-based after-school music program, which was the treatment for this study. The treatment will be described later in this chapter.

A total of 494 fifth-grade students attended the three Korean elementary schools included in this study. The first step in this study was to determine music

underachievers. At the beginning this study and before treatment began, all fifth-grade students (A school, 95; B school, 282; C school, 117) were administered five parts of the Music Achievement Test (MAT) (Colwell, 1968), which were translated into Korean. The total number of questions in the MAT sections was 113, and the highest possible score was 158 points (Table 1). The MAT is described in detail later in this chapter.

Table 1

*MAT Subtests and Possible Scores*

Tests	Parts	Sub Parts	Number of Questions	Points	Total Points
MAT1	Part 1 (Pitch Discrimination)	Sub A	15	1	15
		Sub B	10	1	10
	Part 2 (Interval Discrimination)	Sub A	10	1	10
		Sub B	18	1	18
	Part 3 (Meter Discrimination)		15	2	30
MAT2	Part 5 (Auditory Visual Discrimination)	Sub A	14	2	28
		Sub B	16	2	32
MAT3	Part 4 (Instrument Recognition)	Sub A	10	1	10
		Sub B	5	1	5
Total Possible Score					158

Following administration of the MAT, descriptive statistics were concluded for all students and for each school. Table 2.1 through 2.4 shows the descriptive statistics for the MAT scores for all students (Table 2.1) and for students in each school (Tables 2.2 to 2.4). MAT 1.1-3 is the total of subtests 1.1, 1.2, and 1.3, which is the complete Test 1 of the MAT.

Table 2.1

*MAT Descriptive Statistic for All Students (N = 494)*

Test	<i>M</i>	<i>SD</i>	Variance	Minimum	Maximum
MAT 1.1	16.06	5.69	32.40	2.00	25.00
MAT 1.2	13.41	5.11	26.15	3.00	28.00
MAT 1.3	12.69	5.07	25.75	0.00	30.00
MAT 1.1-3	41.91	12.17	148.13	14.00	77.00
MAT 2.5	20.27	12.75	162.80	0.00	58.00
MAT 3.4	4.70	2.24	5.05	0.00	11.00

Table 2.2

*MAT Descriptive Statistic for A School (N = 95)*

Test	<i>M</i>	<i>SD</i>	Variance	Minimum	Maximum
MAT 1.1	15.01	5.81	33.86	3.00	25.00
MAT 1.2	11.93	4.49	20.18	5.00	28.00
MAT 1.3	11.66	4.80	23.11	0.00	28.00
MAT 1.1-3	38.52	11.67	136.31	18.00	72.00
MAT 2.5	16.27	12.19	148.64	0.00	52.00
MAT 3.4	4.17	2.15	4.65	0.00	10.00

Table 2.3

*MAT Descriptive Statistic for B School (N = 282)*

Test	<i>M</i>	<i>SD</i>	Variance	Minimum	Maximum
MAT 1.1	16.80	5.93	35.24	2.00	25.00
MAT 1.2	14.57	5.48	30.11	3.00	28.00
MAT 1.3	13.46	5.25	27.63	2.00	30.00
MAT 1.1-3	44.40	12.71	161.55	14.00	77.00
MAT 2.5	23.01	13.09	171.45	0.00	58.00
MAT 3.4	5.24	2.23	4.99	0.00	11.00

Table 2.4

*MAT Descriptive Statistic for C School (N = 117)*

Test	<i>M</i>	<i>SD</i>	Variance	Minimum	Maximum
MAT 1.1	15.15	4.67	21.83	3.00	25.00
MAT 1.2	11.80	3.76	14.15	3.00	26.00
MAT 1.3	11.69	4.52	20.45	2.00	24.00
MAT 1.1-3	38.64	9.61	92.48	30.00	72.00
MAT 2.5	16.90	10.64	113.34	4.00	52.00
MAT 3.4	4.09	2.09	4.32	0.00	11.00

During test administration, it become clear that MAT 2, Part 5 (Auditory Visual Discrimination) and MAT 3, Part 4 (Instrument Recognition) were difficult for the students and most were guessing at answers. Therefore, these tests were discarded. Students in each school who scored in the lowest quartile (25% or under) as measured by Test 1 of the MAT (MAT 1.1-3 above) were designated “music underachievers” for the purpose of this study. Table 3 shows the cut off scores, and the number of music underachievers by school.

Table 3

*Lowest Quartile MAT Cut-Off Scores for Three Schools*

School	<i>N</i>	MAT 1.1	MAT 1.2	MAT 1.3	MAT 1.1-3
All schools	122	11.00	10.00	10.00	33.00
A school	23	10.00	9.00	8.00	30.00
B school	70	12.00	10.75	10.00	35.00
C school	29	11.00	9.00	8.00	31.50

Following identification of music underachievers, these students were randomly assigned by school to prospective treatment and control sub-groups for the study. To recruit participants for this study, the after-school music program was announced at each school. After-school programs must be open to all

students in these Korean schools, and participation in this study was voluntary. A total of 61 fifth-grade students (A school, 20; B school, 30; and C school, 11) enrolled in the researcher's MAMP, including both normal achieving students and music underachievers, as determined by the MAT scores. Each school's principal gave permission to conduct the research (see Appendix A). Parental permission letters were sent to the parents of the students in the prospective treatment group who volunteered for the MAMP and the study (see Appendix B). Child assent forms can be found in Appendix C.

After the program began, six students did not come to the class and three students did not attend all sessions. Therefore, 52 students completed all treatment sessions. Of these, 33 students were music underachievers, and these students comprised the treatment group for this study. The control group for this study was determined by creating a matched group from the randomly assigned prospective underachievers who were not enrolled in the after-school music program. The control group students were matched by school, gender, and MAT scores. When an exact match was not possible for MAT score, the student with the next closest possible score was selected. A univariate general linear custom model using SPSS 18.0 was conducted to check for difference in MAT Test 1 pretest scores between the treatment ( $M = 28.39$ ,  $SD = 3.53$ ) and control groups ( $M = 27.72$ ,  $SD = 3.33$ ). The researcher tested for normality and the homogeneity using an independent  $t$ -test. The results of the test indicated that assumption of homogeneity and normality were met ( $t = .78$ ,  $p = .43$ ). Therefore, the randomized assignment was effective.

Thus, the total subjects for this study included 66 fifth-grade students ( $N = 66$ ). Subjects in the treatment group ( $n = 33$ ) experienced the MAMP, and subjects in the control group ( $n = 33$ ) did not experience the MAMP. Both groups continued to participate in their regular school music classes. Demographic data for the treatment and control groups by school, gender, and total numbers of students are reported Table 4.

Table 4

*Treatment and Control Group Demographic Data*

Groups	Treatment Group				Control Group			
	A	B	C	Total	A	B	C	Total
Schools								
Male	5	3	3	11	5	3	3	11
Female	2	9	11	22	2	9	11	22
Total Students	7	12	14	33	7	12	14	33

### **Treatment**

The treatment for this study was a movement-based after-school music program (MAMP) designed by the researcher. The treatment group received the MAMP; the control group did not receive the instruction. The treatment sessions occurred from March through June of 2011. The researcher taught the treatment groups once a week for 14 weeks for a total of 14 lessons during the spring semester based on the school schedule in Korea. School A group met on Tuesdays from 3:10 pm to 4:00 pm; school B group met on Thursdays from 2:40 pm to 3:30 pm; and school C group met on Fridays from 3:00 to 3:50 pm. Each session of the MAMP was 50 minutes long. Students participated in various movement and musical activities based on Kodály, Orff, and Dalcroze pedagogies. These

pedagogies and kinds of activities are not typically used by music teachers in Korean elementary schools in part due to constraints of time and space. Further, other after-school music programs focus on performance, such as choir singing or playing of western orchestral instruments or Korean traditional instruments. Thus the treatment was different from the students' typical music instruction, and also different from other after-school music programs.

The researcher was the instructor for MAMP treatment group at all three schools. In order to implement the MAMP, the researcher included movement and singing games with Korean and multicultural music; movement with rhythmic, listening, and creative activities; body percussion; moving to story-songs; and playing Orff instruments in the sessions. The researcher created lesson plans, which were reviewed by Dalcroze, Orff, and Kodály specialists and the advisor of this study. The fourteen movement-based lesson plans included singing, creating, improvising, listening, playing Orff instruments, and activities focused on elements of music such as dynamics (louder/softer), tempo (faster/slower), timbre, rhythm (longer/shorter), beat, accent, meter, phrase, form, and pitch (higher/lower/repeat). A description of lesson plans is included in Appendix D.

### **Instrumentation**

Pre-test and post-test measures included Colwell's Music Achievement Test (1968), Kim's Social Development Test (2007), and Hare's Self-Esteem Scale (1975). The scores of these measures were the dependent variables for this study. These measures are described below.



### ***Music Achievement Test***

The Music Achievement Test (MAT) by Colwell (1968) is designed to provide an accurate measurement of music achievement for some of the most important objectives of music education programs. The MAT is divided into four independent tests: Test 1 covers pitch (high and low), interval (skipwise and scalewise), and meter (duple and triple) discrimination; Test 2 covers major-minor mode, feeling for tonal center, and auditory-visual (music reading) discrimination; Test 3 covers tonal memory, melody recognition, pitch recognition, and instrument (solo and accompanied instruments) recognition; Test 4 covers musical style (composer and texture), auditory-visual (rhythm) discrimination, and chord and cadence recognition. The tests are constructed to furnish essential information to teachers about students' musical achievement. Colwell describes the general purpose of the MAT in the manual:

To enable the teachers to determine how well each pupil has mastered the basic auditory objectives of the school music program.

To offer information to the instrumental teacher as to those pupils who will profit most from instrumental instruction.

To supply teachers, administrators, parents, and pupils with information useful to pupil guidance.

To provide teachers and administrators with data for program evaluation and improvement.

To provide a teaching device, to help the pupil see clearly some of the objectives of the music program and the nature of his own progress with respect to them.

To provide a valid measure for the use of curriculum researchers. (pp. 27-29)

According to Colwell (1968), the reliability of Test 1, estimated using the Kuder-Richardson formula 21, is .88 with a standard deviation of 10.41 for a sample size of 7,710 students, and the reliability of Test 2, estimated using KR 21, is .918 with a standard deviation of 16.96 for a sample size of 13,518 students (p. 63). The total reliability of Test 1 and 2 of MAT, as computed by KR 21, is .951 with a standard deviation of 28.08 (p. 63). The reliability of MAT Tests 3 and 4 for the standardization sample was also computed using Kuder-Richardson formula 21. Colwell noted that “reliability coefficients computed with combined grade levels are usually spuriously high” (p. 64). Grade level reliability coefficient and standard error of measurement for all tests as computed using KR 21 are shown in tables 5.1 to 5.4.

Table 5.1

*Mean, Standard Deviation, and Reliability by Grade Level for MAT Test 1*

Grade	Number	<i>M</i>	<i>SD</i>	KR 21	Range	<i>SE</i>	Median
4	1237	45.02	10.93	0.840	71	4.37	43.00
5	1683	47.43	10.81	0.838	72	4.35	46.00
6	1980	50.31	11.59	0.865	67	4.27	49.00
7	1154	51.35	12.33	0.884	72	4.21	50.00
8	283	53.70	13.75	0.911	71	4.09	52.00
High School	992	58.31	13.76	0.921	80	3.88	58.00

\* Table 5.1: Adapted from MAT Manual for Tests 1 and 2 (Colwell, 1968, p. 67)

Table 5.2

*Mean, Standard Deviation, and Reliability by Grade Level for MAT Test 2*

Grade	Number	<i>M</i>	<i>SD</i>	KR 21	Range	<i>SE</i>
4	2549	36.86	10.73	0.797	92	4.84
5	3250	40.22	13.30	0.865	96	4.88
6	2509	43.10	15.20	0.896	95	4.80
7	2313	47.56	17.74	0.924	94	4.89
8	1449	48.63	18.60	0.931	89	4.87
High School	255	71.83	23.42	0.965	90	4.38

\* Table 5.2: Adapted from MAT Manual for Tests 1 and 2 (Colwell, 1968, p. 68)

Table 5.3

*Mean, Standard Deviation, and Reliability by Grade Level for MAT Test 3*

Grade	Number	<i>M</i>	<i>SD</i>	KR 21	Range	<i>SE</i>	Median
4	57	19.86	5.17	0.460	32	3.80	19.80
5	81	23.09	7.11	0.693	39	3.94	22.03
6	611	27.17	8.27	0.756	65	4.08	26.33
7	3004	32.57	9.42	0.803	73	4.18	31.78
8	2035	33.80	10.82	0.853	65	4.15	32.80
9	1486	37.50	12.11	0.884	71	4.13	37.22
10	800	40.28	11.67	0.875	67	4.13	40.25
11	878	41.55	12.76	0.898	63	4.07	42.59
12	529	43.86	13.19	0.907	69	4.02	44.67

\* Table 5.3: Adapted from MAT Manual for Tests 3 and 4 (Colwell, 1968, p. 68)

Table 5.4

*Mean, Standard Deviation, and Reliability by Grade Level for MAT Test 4*

Grade	Number	<i>M</i>	<i>SD</i>	KR 21	Range	<i>SE</i>	Median
5	70	32.84	10.30	0.814	62	4.44	31.00
6	509	32.49	10.77	0.824	81	4.52	35.33
7	2048	37.48	10.97	0.829	72	4.54	36.38
8	2385	40.03	11.38	0.839	81	4.56	39.21
9	1686	44.39	12.05	0.856	80	4.57	44.39
10	776	48.08	12.89	0.877	78	4.52	48.67
11	802	50.61	12.82	0.877	79	4.50	51.29
12	678	52.63	13.04	0.883	76	4.45	53.79

\* Table 5.4: Adapted from MAT Manual for Tests 3 and 4 (Colwell, 1968, p. 70)

Colwell reports that content validity for the MAT was established by consulting with a panel of school music authorities who reviewed test items and test content. Content validity was further established by comparing test items to skills recommended in various curriculum documents. As an indicator of criterion-related validity, correlations between teacher selections of their best five and poorest five students and MAT test scores were high for all trial versions of the test; correlations with scores on the final form of the tests were .92 ( $N = 1893$ ). According to the test manual, a study of predictive validity of MAT found:

The predictive value of MAT for beginning instrumentalists showed a correlation of .65 between an administration of MAT 1 and 2 to 7th graders ( $N = 26$ ) beginning their study of instrumental music in September and the teachers' rating of their performance in June. (p. 24)

The subsections of the MAT are independent and, according to Colwell, may be used individually or in various combinations because “any of the tests may be appropriate depending upon the teachers’ objectives” (p. 26). For this study, the researcher planned to use selected sections of MAT 1, 2, and 3 as follows: all of Test 1, which provides data on three musical skills of pitch, interval, and meter discrimination; the auditory-visual discrimination (pitch and rhythm) section of Test 2, which is closely related to music reading; and the instrument recognition subsections (solo and accompanied instruments) of Test 3.

Test 1 has three parts: pitch, interval, and meter discrimination. Pitch discrimination, one of the most fundamental skills, is a 25-item test, comprised of two subtests of two and three tones. The subtest for two tones is 15 questions and

the subtest of three tones is 10 questions. Interval discrimination, the next subtest, is related to pitch discrimination but measures a distinctly different skill, that is, recognition of distance between pitches. The interval discrimination test is comprised of two subtests: three tone patterns and phrases. The three-tone pattern subtest is 10 items and the phrases subtest is 18 items for a total of 28 questions. The last section of Test 1 is meter discrimination. The meter discrimination section includes simple rhythm (non-melodic patterns) played on a piano. The meter discrimination subtest is composed of one subtest with 15 questions in duple and triple meter. Test 1 was used as the pre-test and post-test measure in this study.

The auditory-visual discrimination subtest of Test 2 was designed to measure the pupils' understanding of musical symbols. In the manual for Test 2, Colwell (1968) states that in "both subtests of the Auditory-Visual Discrimination part, the pupil is asked to match the music he/she hears (auditory) with the notation he/she sees on his/her answer sheet (visual)" (p. 113). This subtest is the only group test known to be a reliable indication of music reading. The auditory-visual discrimination test is composed of two parts: pitch and rhythm. The pitch subtest contains 12 items, and the rhythm subtest is composed of 12 items. While the researcher intended to use the auditory-visual discrimination subtests of Test 2 as a pretest-posttest measure, students' confusion during the phase of the study that determined music underachievers led to a decision to discard this subtest as part of the pretest-posttest MAT measure.

Test 3, instrument recognition, consists of test items which make rather fine discriminations of western orchestral instruments, demanding recognition of the unique sound of a single instrument. The instrument discrimination test includes two subtests: solo and accompanied instruments. The solo instruments subtest consists of 10 items. The accompanied instrument subtest is composed of 5 items and measures the student's ability to identify instrumental timbre in a solo context within an orchestral setting. While the researcher intended to use the instrument discrimination subtests of Test 3 as a pretest-posttest measure, students' confusion during the phase of the study that determined music underachievers led to a decision to discard this subtest as part of the pretest-posttest MAT measure.

The researcher translated the MAT into Korean and made a new answer form for Korean elementary students. The sample answer form can be found in Appendix E. For all tests, students listened to the recorded "question," then filled in the blank on the test answer form when they decided which answer was correct. Students could erase and change their answers until the next question started. For each subtest, sample questions were given before the test. The combined test time was 40 minutes.

All fifth-grade students in three elementary schools ( $N = 494$ ) took the five sections of the MAT to determine music underachievers for this study, and described earlier in this chapter. The researcher administered the MAT test at each school participating in the study, and music teachers assisted the researcher in collecting the test papers. The test was administered during regular music

classes. As noted above, the treatment and control groups for this study were randomly selected from the lowest quartile of scores. The scores from the first test administration were used at the pretest scores for the treatment and control groups. After finishing the 14 lesson plans of the treatment, all fifth-grade students ( $N = 494$ ) took the MAT again, as control group students could not be pulled out of classes for separate testing. The scores of only the students from treatment and control groups were used in this study. Pretest and posttest MAT data for treatment and control groups will be reported Chapter 4.

### ***Social Development Scale***

The Social Development Scale (SDS) by H. E. Nam (2003) was used to measure social development in this study. Nam modified and developed the SDS using Hetherington's social acceptance test (Hetherington, Stuwie, & Ridberg, 1971) and Bakeman and Brown's social development test (1980). S. M. Kim (2007) revised and reorganized Nam's SDS for her research in Korea. The researcher used Kim's version of the SDS in this study.

The SDS is a 40-item scale that includes eight subscales: credibility, autonomy, leadership, industry, stability, sociability, service, and rule observance (Kim, 2007). Students respond to items on the SDS using a 5-point Likert-type scale by checking one of the following options for each question: strongly agree (5), agree (4), average (3), disagree (2), strongly disagree (1). S. M. Kim (2007) determined reliability using Chronbach's alpha. The total reliability is .93. Subscale reliabilities are reported in Table 6.

Table 6

*Questions and Reliability Data for Subscales of the Social Development Scale*

Sub-constituents of student's sociality	Questions	The number of questions	Reliability
Credibility	1, 2, 3, 4, 5	5	.66
Autonomy	6, 7, 8, 9, 10	5	.64
Leadership	11, 12, 13, 14, 15	5	.79
Industry	16, 17, 18, 19, 20	5	.78
Stability	21, 22, 23, 24, 25	5	.69
Sociability	26, 27, 28, 29, 30	5	.80
Service	31, 32, 33, 34, 35	5	.78
Rule Observance	36, 37, 38, 39, 40	5	.68
Total		40	.93

Table 6: Adapted from Kim, 2007, p. 47

The SDS was given to all students in all three elementary schools ( $N = 494$ ) at the beginning and the end of study for ease of data collection and to avoid pulling control group students out of classes. Only the pretest and posttest data of the treatment and control groups were used in this study. The researcher administered the SDS test. The test administration time for the SDS was approximately 15 minutes. The questions for the SDS, translated from Korean into English for the purposes of this document, can be found in Appendix F. Pretest and posttest SDS data for treatment and control groups will be reported in Chapter 4.

***Self-Esteem Scale***

Hare's Self-Esteem Scale (HSS) (Fischer and Corcoran, 2007) is a 30-item scale that includes three 10-item subscales for the areas of peer, school, and home. These are the major places of interaction in which the child develops a sense of self-worth, and they represent something close to the child's social universe.



Fischer and Corcoran (2007) state that the sum of all 30 items is viewed as a general self-esteem measure. Items include both self-evaluative and other-evaluative statements, and are intended to provide a report of the subject's general sense of self-feeling within each of the three subscale areas. The HSS can be administered individually or in groups, orally or in writing. Students respond to the HSS items using a 4-point scale: strongly disagree (a = 1), disagree (b = 2), agree (c = 3), strongly agree (d = 4). The researcher summed the students' HSS scores after reverse-scoring negatively worded items.

Fischer and Corcoran (2007) state that the HSS was tested on fifth and eighth graders, including 41 black and 207 white students, and 115 boys and 137 girls. Means for the subsamples ranged from 90.4 to 95, with a group mean of 91.1. No internal consistency data are reported. Test-retest correlations indicate good stability, with three-month correlations ranging from .56 to .65 for the three subscales and .74 for the general scale.

The sourcebook of measures for clinical practice and research (Fischer & Corcoran, 2007) states the following about validity:

The Hare's SES general scale correlated at .83 with both the Coopersmith Self-Esteem Inventory and the Rosenberg Self-Esteem Scale, indicating excellent concurrent validity. The three subscales also correlated significantly with changes in life status and with predicted area-specific activities (e.g., reading achievement scores with school subscale). This suggests that changes in area-specific sources of self-esteem do not result in changes in the level of general self-esteem. (p. 537)

In this study, the HSS was given to all fifth-grade students in all three elementary schools ( $N = 494$ ) at the beginning and the end of study for ease of data collection. Only the pretest and posttest data of the treatment and control groups were used in this study. The researcher administered the HSS test. The test administration time for the HSS is approximately 15 minutes. The questions for the HSS, translated from Korean into English for the purposes of this document, can be found in Appendix G. Pretest and posttest data for treatment and control groups will be reported Chapter 4.

### **Research Questions and Null Hypotheses**

The research questions for this study are stated below, followed by the null hypothesis for each question. Dependent variables are indicated by DV and independent variables are indicated by IV in the hypotheses.

1. Is there a significant difference in musical achievement as measured by the Colwell's Music Achievement Test for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

Ho: There is no significant difference in musical achievement, as measured by the Colwell's Music Achievement Test (DV), for students in the treatment and control groups (IV).

2. Is there a significant difference in sociality as measured by the Kim's Social Development Test between for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

Ho: There is no significant difference in social development, as measured by Kim's Social Development Scale (DV), for students in the treatment and control groups (IV).

3. Is there a difference in self-esteem as measured by the Hare's Self-Esteem Scale for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

Ho: There is no significant difference in self-esteem, as measured by Hare's Self-Esteem Scale (DV), for students in the treatment and control groups (IV).

### **Analysis**

The Statistical Package for the Social Sciences (SPSS) version 18.0 analysis software program was used to analyze data. The pretests and posttests were scored for all fifth-grade students ( $N = 494$ ) and saved in a database. Students were given a participant number that was recorded and maintained. For this study, the data for treatment group ( $n = 33$ ) and control group ( $n = 33$ ) were extracted and placed into a separate database.

An Analysis of Covariance (ANCOVA) test was used to analyze data and answer questions related to each dependent variable: music achievement, social development, and self-esteem. According to Dimitrov and Rumrill (2003), with randomized designs the "main purpose of ANCOVA is to reduce to error variance, because the random assignment of subjects to groups guards against systematic bias" (p. 161). According to Best and Kahn (1998), a researcher uses ANCOVA

“to eliminate initial differences on several variables between the experimental and control groups by statistical methods” (p. 163). In this study, even though the treatment and control group were matched as closely as possible on one dependent variable (MAT), the pretest means were not identical, and the treatment and control groups were not matched on the other two dependent variables (SDS and HSS). According to Best and Kahn (1998), ANCOVA may be used “because even with random assignment the groups were not exactly equal” (p. 174). Campbell and Stanley (1963) state “the analysis of covariance with pretest scores as the covariate are usually preferable to simple gain-score comparisons” (p. 23). The ANCOVA was used in order to compare two groups in this study. One ANCOVA was conducted for each dependent variable. The levels of significance was set at  $\alpha = .05$ . Results are reported in Chapter 4.

## CHAPTER 4

### RESULTS

The purpose of this study was to determine the effects of a movement-based after-school music program on the musical achievement, social development, and self-esteem of music underachievers. Before beginning this study, 494 fifth-grade students from three Korean elementary schools (A school, 95; B school, 282; and C school, 117) were administered several sections of the Music Achievement Test (Colwell, 1968), which were translated into Korean. Students of each school in the lowest quartile (25% or under) were designated “music underachievers” for the purposes of this study. After determination of music underachievers, students were randomly assigned to prospective treatment and control groups.

A total of sixty-six fifth-grade students from three elementary schools in Daejeon and Choungnam, Korea, participated in this study. The subjects were from a middle class socioeconomic group of a single Asian race. Thirty-three students from the prospective treatment group voluntarily enrolled in the after-school treatment. The treatment group ( $n = 33$ ) was comprised of 7 students from A school, 12 students from B school, and 14 students from C school. The control group ( $n = 33$ ), drawn from the randomly assigned respective control group, was matched by school, gender, and closest possible MAT score.

The data for this study are pretest and posttest scores for the treatment and control groups on three independent measures. This chapter presents the results of the data analysis for the three dependent variables: music achievement scores

(MAT), social development scores (SDS), and self-esteem scores (HSS).

Descriptive and inferential statistics are included.

### **Analysis**

Analysis of each of the three dependent variables is reported below. The research question is presented first, followed by descriptive statistics for pretest and posttest data. Then, the hypothesis for the research question is stated, and the results of analysis of covariance tests are reported. Data for music achievement are reported first, followed by data for social development, and finally data for self-esteem.

#### ***Music Achievement Data***

The first research question for this study was: Is there a significant difference in musical achievement as measured by the Colwell's Music Achievement Test for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

The Music Achievement Test (MAT) by Colwell (1968) is designed to provide an accurate measurement of achievement for some of the most important objectives of music education programs. For this study, the researcher used MAT Test 1, which covers pitch (high and low), interval (skipwise and scalewise), and meter (duple and triple) discrimination. Table 7 shows the pretest and posttest means for the treatment and control groups for all MAT subtests and for the total MAT Test 1. Examination of the means shows that all means increased from the

pretest to the posttest for both treatment and control groups for all subtests and for the MAT total (see Appendix J for graphs).

Table 7

*Pre-Test and Post-Test MAT Mean Scores for Treatment and Control Group*

Test	Group	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
Pitch	Treatment	10.90	2.26	13.21	2.50
	Control	10.00	3.02	11.39	3.73
Interval	Treatment	8.75	1.65	9.24	2.17
	Control	8.75	2.46	9.45	2.76
Meter	Treatment	8.72	3.07	10.00	2.00
	Control	8.96	2.74	9.15	2.64
Total	Treatment	28.39	3.53	32.45	3.45
	Control	27.72	3.33	30.00	4.74

Treatment ( $n = 33$ ), control ( $n = 33$ )

Although school and gender were not treated as independent variables in this study, descriptive data for school and gender are provided as a matter of interest. Table 8 shows pretest and posttest means by schools and groups. Means increased for all subtests and for the MAT total for both groups in all three schools. It is important to note that all students continued to participate in their regular school music classes during this study, which may explain the increase in scores for all groups. It is also interesting to note that the students in A and B schools seem to have increased more than students in C school. In A and B schools, the regular music classes are taught by music specialists. In C school, there is no music specialist; the classroom teachers teach the music classes.

Table 8

*MAT Mean Scores and Standard Deviations by Schools and Groups*

School	Group	<i>N</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
A school	Treatment	7	26.42	3.86	34.00	4.12
	Control	7	27.00	2.82	30.71	5.99
B school	Treatment	12	30.25	3.69	33.50	2.87
	Control	12	28.33	3.89	31.25	5.01
C school	Treatment	14	27.78	2.57	30.78	3.04
	Control	14	27.57	3.20	28.57	3.69

Table 9 shows MAT mean scores and standard deviations for male and female students in the treatment and control groups. All means except two increased from pretest and posttest.

Table 9

*Pre-Test and Post-Test Mean Scores of MAT between Male and Female Students in Treatment and Control Group*

Sub Test	Gender	Treatment Group				Control Group			
		Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
Pitch	Male	9.72	2.28	12.90	2.11	9.18	3.21	10.90	4.13
	Female	11.50	2.06	13.36	2.71	10.40	2.90	11.63	3.59
Interval	Male	8.36	1.28	8.81	2.04	9.63	2.01	8.90	3.23
	Female	8.95	1.81	9.45	2.26	8.31	2.58	9.72	2.52
Meter	Male	8.72	3.82	9.81	1.66	8.72	2.05	10.00	2.36
	Female	8.72	2.72	10.09	2.18	9.09	3.06	8.72	2.72
Total	Male	26.81	4.21	31.54	2.80	27.54	3.69	29.81	5.82
	Female	29.13	3.05	32.90	3.71	27.68	3.49	30.13	4.32

Male ( $n = 11$ ), Female ( $n = 22$ ) for both treatment and control groups



The research question for musical achievement in this study is stated as a null hypothesis below.

Ho: There is no significant difference in musical achievement, as measured by the Colwell's Music Achievement Test (DV), for students in the treatment and control groups (IV) following treatment.

The researcher conducted an analysis of covariance test to determine whether there was a significant difference between treatment and control groups following the MAMP treatment. The dependent variable was the MAT posttest scores of the treatment ( $M = 32.45$ ,  $SD = 3.46$ ) and control groups ( $M = 30.00$ ,  $SD = 4.74$ ). The covariate was the MAT pretest scores. The alpha level was set at .05. Levene's Test of Equality of Error Variances was .06, indicating that the assumption of homogeneity at variance is met. Table 10 shows that results of the ANCOVA test indicated a significant difference ( $F = 5.178$ ,  $p < .026$ ). The adjusted means were 32.26 for the treatment group and 30.19 for the control group. The confidence intervals were 30.98 to 33.55 for the treatment group and 28.91 to 31.48 for the control group. The treatment group's posttest mean score was significantly higher than the posttest mean score of the control group, following adjustments for pretest differences.

Table 10

*Total MAT Test of between Subjects Effects of ANCOVA*

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>S</i>
Pretest (MAT)	247.966	1	247.966	18.288	.000
Group	70.215	1	70.215	5.178	.026
Error	854.215	63	13.559		
Total	65561.000	66			

$p < .05$

***Social Development Data***

The second research question was: Is there a significant difference in sociality as measured by the Kim’s Social Development Test between for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

The Social Development Scale (SDS) by Nam (2003) was used to measure social development in this study. Nam modified and developed the SDS using Hetherington’s social acceptance test (1971) and Bakeman and Brown’s social development test (1980). Kim (2007) revised and reorganized Nam’s SDS for her research in Korea. The researcher used Kim’s version of the SDS in this study.

The SDS consists of 40 Likert-type questions relating students’ credibility, autonomy, leadership, industry, stability, sociability, service, and law observance. Questions were scored from 1 to 5, and the total possible score is 200. The Chronbach’s  $\alpha$  reliability of the SDS was .96 in this study (Table 11). The reliability coefficients are similar to those reported by Kim (2007), as shown in Chapter 3.

Table 11

*Alpha Reliability of the Social Development Scale*

Sub-Scales	Questions	The number of questions	Cronbach's $\alpha$
Credibility	1, 2, 3, 4, 5	5	.60
Autonomy	6, 7, 8, 9, 10	5	.66
Leadership	11, 12, 13, 14, 15	5	.83
Industry	16, 17, 18, 19, 20	5	.75
Stability	21, 22, 23, 24, 25	5	.78
Sociability	26, 27, 28, 29, 30	5	.87
Service	31, 32, 33, 34, 35	5	.85
Rule Observance	36, 37, 38, 39, 40	5	.81
Total		40	.96

Pretest and posttest means for treatment and control groups are shown in Table 12. In this study, the groups were determined by random assignment using the MAT scores and matched by school, gender, and MAT scores. The researcher used the same treatment and control groups throughout the study for all dependent variables. Table 12 shows that both the pretest and posttest SDS means for treatment and control groups were very different, with the control group much higher than the treatment group at the beginning of the study. It is interesting to note that the means increased for the treatment group and decreased for the control group (see Appendix J for graphs).

Table 12

*Pre-Test and Post-Test SDS Mean Scores for Treatment and Control Group*

Group	Pre $M$	$SD$	Post $M$	$SD$
Treatment	132.39	22.91	133.93	24.81
Control	147.60	22.57	145.90	24.85

Treatment Group ( $n = 33$ ), control Group ( $n = 33$ )

Although school and gender were not treated as independent variables in this study, descriptive data for school and gender are provided as a matter of interest in Tables 13 and 14. Table 13 shows pretest and posttest SDS means by schools for treatment and control groups. Table 14 shows pretest and posttest means SDS for treatment and control by gender. Mean scores for both males and females decreased in the control group; in the treatment group mean scores for males decreased and for females increased.

Table 13

*SDS Mean Scores and Standard Deviations by Schools and Groups*

School	Group	<i>N</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
A school	Treatment	7	131.28	24.23	136.85	22.74
	Control	7	142.14	16.56	149.28	18.93
B school	Treatment	12	132.91	21.79	128.00	24.07
	Control	12	154.58	18.96	156.75	18.85
C school	Treatment	14	132.50	24.91	137.57	27.10
	Control	14	144.35	27.39	134.92	28.45

Table 14

*Pre-Test and Post-Test Mean Scores of SDS between Male and Female Students in Treatment and Control Group*

Gender	Treatment Group				Control Group			
	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
Male	122.45	25.87	120.81	23.92	144.27	18.54	143.18	22.85
Female	137.36	20.09	140.50	23.02	149.27	24.57	147.27	26.21

Male (*n* = 11), Female (*n* = 22) for both treatment and control groups

The null hypothesis for the second research question of this study is:

Ho: There is no significant difference in social development, as measured by Kim's Social Development Scale (DV), for students in the treatment and control groups (IV).

The researcher conducted an analysis of covariance test to determine whether there was a significant difference in social development between treatment and control groups following treatment. The dependent variable was the SDS posttest scores of the treatment ( $M = 133.94$ ,  $SD = 24.81$ ) and the control groups ( $M = 145.91$ ,  $SD = 24.86$ ). The covariate was the SDS pretest. The alpha level was set at .05. Levene's Test of Equality of Error Variances was .61, indicating that the assumption of homogeneity of variance was met. Table 15 shows that results of the ANCOVA test indicated there was no significant difference ( $F = .205$ ,  $p < .652$ ) between treatment and control groups.

Table 15

*Total SDS Test of between Subjects Effects of ANCOVA*

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>S</i>
Pretest (SDS)	26656.464	1	26656.464	131.035	.000
Group	41.779	1	41.779	.205	.652
Error	12816.142	63	203.431		
Total	1334037.000	66			

$p > .05$

### *Self-Esteem Data*

The third research question for this study was: Is there a difference in self-esteem as measured by the Hare's Self-Esteem Scale (HSS) for music underachievers who receive the movement-based after-school music program (MAMP) and music underachievers who did not receive the MAMP?

Hare's Self-Esteem Scale (HSS) is comprised of 30-item Likert-type questions that include three 10-item subscales for the areas of peer, home, and school. These are the major places of interaction in which the child develops a sense of self-worth. Questions were scored from 1 to 4, and the total possible score is 120. The Chronbach's  $\alpha$  reliability of the SES was .69 in this study (Table 16). The reliability coefficients are similar to those reported by Fisher and Corcoran (2007) (see Chapter 3).

Table 16

#### *Alpha Reliability of the Self-Esteem Scale*

Sub-Scales	Questions	The Number of Questions	Chronbach's $\alpha$
Peer	1-10	10	.66
Home	11-20	10	.66
School	21-30	10	.63
Total		30	.69

In this study, the groups were determined by random assignment using the MAT scores and matched by school, gender, and MAT scores. The researcher used the same treatment and control groups throughout the study for all dependent variables. Table 17 shows pretest and posttest means for treatment and control groups for the HSS total and the three subscales. The pretest and posttest means

for both treatment and control groups changed very little between pretest and posttest. It is interesting to note that five of the eight group means decreased from pretest to posttest for the treatment and control groups. For the HSS total, the treatment group increased slightly and the control group decreased slightly (see Appendix J for graphs).

Table 17

*Pre-Test and Post-Test HSS Mean Scores for Treatment and Control Groups*

Sub Test	Group	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
Peer	Treatment	28.12	4.09	30.42	3.69
	Control	29.15	3.70	30.00	5.39
Home	Treatment	32.78	3.90	31.81	3.94
	Control	33.09	4.20	32.57	4.48
School	Treatment	30.21	3.83	29.39	3.92
	Control	31.06	3.70	30.45	4.65
Total	Treatment	91.21	9.37	91.63	9.20
	Control	93.30	9.03	93.03	12.57

Treatment group ( $n = 33$ ), control group ( $n = 33$ )

Table 18 shows pretest and posttest HSS means by schools for treatment and control groups. Table 19 shows pretest and posttest means by gender for treatment and control groups. These data are provided as a matter of interest. School and gender were not treated as independent variables in this study.

Table 18

*HSS Mean Scores and Standard Deviations by Schools and Groups*

School	Group	<i>N</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
A school	Treatment	7	94.00	8.92	98.00	7.72
	Control	7	88.42	7.25	91.71	9.74
B school	Treatment	12	90.00	8.95	89.08	8.11
	Control	12	97.91	7.40	101.08	8.96
C school	Treatment	14	90.85	10.30	90.64	9.81
	Control	14	91.78	9.77	86.78	13.20

Table 19

*Pre-Test and Post-Test Mean Scores of HSS between Male and Female Students in Treatment and Control Group*

Sub Test	Gender	Treatment Group				Control Group			
		Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>	Pre <i>M</i>	<i>SD</i>	Post <i>M</i>	<i>SD</i>
Peer	Male	27.27	4.94	29.72	3.82	27.81	3.51	29.63	3.29
	Female	28.54	3.66	30.77	3.66	29.81	3.68	30.18	6.24
Home	Male	33.63	3.61	32.54	3.58	33.45	4.36	32.90	1.37
	Female	32.50	4.06	31.45	4.13	32.90	4.20	32.40	5.44
School	Male	29.27	3.77	28.18	3.70	31.09	2.87	30.81	2.96
	Female	30.68	3.85	29.68	4.08	31.04	4.12	30.27	5.36
Total	Male	90.18	9.19	91.09	8.43	92.36	7.72	93.36	5.33
	Female	91.72	9.63	91.90	9.74	93.77	9.76	92.86	15.07

Male ( $n = 11$ ), Female ( $n = 22$ ) for both treatment and control groups

The null hypothesis for the third research question of this study is:

Ho: There is no significant difference in self-esteem, as measured by Hare's Self-Esteem Scale (DV), for students in the treatment and control groups (IV).

The researcher conducted an analysis of covariance test on the HSS scores to determine whether there was a significant difference in self-esteem between



treatment and control groups following the treatment. The dependent variable was the HSS posttest scores of the treatment ( $M = 91.64$ ,  $SD = 9.20$ ) and control group ( $M = 93.03$ ,  $SD = 12.57$ ). The covariate was the HSS pretest. The alpha level was set at .05. Levene's Test of Equality of Error Variances was .012, indicating that the assumptions of homogeneity of variance were not met. However, given equal sample sizes and randomization, the design is robust enough for an ANCOVA.

Table 20 shows that results of the ANCOVA test indicated there was no significant difference ( $F = .026$ ,  $p < .871$ ) between treatment and control groups.

Table 20

*Total HSS Test of between Subjects Effects of ANCOVA*

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>S</i>
Pretest (SDS)	3669.630	1	3669.630	56.374	.000
Group	1.722	1	1.722	.026	.871
Error	4100.976	63	65.095		
Total	570482.000	66			

$p > .05$

CHAPTER 5  
SUMMARY, CONCLUSION, AND IMPLICATIONS  
FOR FUTURE RESEARCH

**Summary**

Identifying exactly what is meant by underachievement is a real concern to educators and to researchers. Annesley, Odhner, Madoff, and Chansky (1970) define underachievers as those who are normal or high in ability and low in achievement. Cho (2004) states that underachievers are students who are normal in intelligence but low in school academics, and who do not have mental, emotional, and physical disorders.

Improving the performance of underachievers is an important issue in the field of education, and educators and policymakers from all over the world are struggling to help their children overcome underachievement in school academic subjects (McCall, 1994). To do this, they must present educational policies and programs that satisfy the demands of parents who have children performing below expectations and the demands of members of the public who think schools already provide typical academic programs to children who have no other learning or emotional problems.

The Korean government suggests alternative ways to increase underachievers' academic scores, including after-school programs. Lee (2008) states underachievers may feel maladjustment about school study when they enter the upper grades, and Lee also suggests that underachievers in regular classes will have a hard time in school without any additional support programs for their study.

Through after-school programs, schools can provide appropriate educational services that support students' needs.

In the case of Korean after-school programs as an education system, various programs have been offered to students, such as the development of talent-aptitude program, the core subjects' program, the lifelong education program, the neighboring schools cooperation program, and the after-school child care programs (H. Y. Kim, 2010). Music has long been recognized as important in the lives of children, and elementary music teachers have used a variety of pedagogical methods to engage children in music. Music programs are included in after-school choices, but no programs have been designed for music underachievers. More studies about music underachievers and the effectiveness of programs designed for them are necessary.

The purpose of this study was to examine the effects of a movement-based after-school music program (MAMP) on music underachievers' musical achievement, social development, and self-esteem in Korean primary schools. The treatment for music underachievers included movement with singing games and multicultural songs, playing instruments, and creating activities derived from or based upon Dalcroze, Kodály, and Orff's pedagogies.

Music programs for low academic achieving students in Korea have been shown to improve students' self-confidence and completion motivation (M. H. Lee, 2005), improve concentration and task performance for students with learning disabilities (I. M. Kim, 2002; C. S. Lee, 2008), and improve self-image and relationships between classmates and underachievers (I. S. Nam, 2002; Cho,

2004). Several studies conducted in Korean elementary schools suggest that music activities can improve self-esteem, self-confidence, and sociality (T. M. Kim, 2006; Shin, 2009), and similar results have been found in studies in the United States (Austin, 1990; Costa-Giomi, 2004; Trusty & Oliva, 1994; Wig & Boyle, 1982). However, Hallam (2010) notes that music experiences must be rewarding to enhance self-perception, and other researchers in general education note that domain specific achievement is important to self-esteem and social development (Baumeister et al, 2003; Kritjansson, 2007). This suggests that rewarding musical experiences in which students perceive that their musical skills improve are also good for the students' self-esteem.

Movement is an important component of music pedagogies (Landis & Carder, 1990; Choksy, Abranmos, Gillespie, Woods, & York, 1986). Shehan (1990) also notes that "movement is integral to a child's musical experiences. The physical self is vital to music learning; the body is an important pedagogical tool" (p. 363). Music instruction that included movement can enhance self-esteem (Cheek, 1979) and help develop sociality (Merrifield, 2006). Movement activities have been used to teach musical skills and concepts. Some evidence exists to suggest that movement instruction with music helps students to understand concepts and develop skills in general and instrument music classes (Jones, 1992; Martinovic-Trejgut, 2010; O'Leary, 2010; Schmidt & Lewis, 1987). The treatment in this study emphasized movement with music instruction for music underachievers.

This study was conducted from March to July 2011, in the city of Daejeon and the province of Chungcheongnam-do, Korea. The pretests were conducted from March 5 to April 4, 2011, and the posttests were conducted from June 6 to June 19, 2011. Fifth-grade students in three Korean elementary schools participated in this study. Music underachievers were determined by administering Test 1 of Colwell's Music Achievement Test (MAT), a standardized measure of music achievement (1968). Students who scored in the lowest quartile were designated as music underachievers. The music underachiever students in each school were randomly assigned to treatment and control groups. Enrollment in the treatment was voluntary. The treatment group consisted of 33 students, including 7 students in school A, 12 students in school B, and 14 students in school C. The control groups consisted of same number of students as the treatment group, matched from the randomized control group by school, gender, and MAT scores.

The researcher taught only the treatment groups once a week during one semester for a total of 14 lessons. Each lesson was 50 minutes long. Both treatment and control groups received regular music classes in their schools with their music classroom teachers. Only the treatment groups received the MAMP.

To design the treatment, the researcher created 14 lesson plans that included movements with singing games and multicultural songs, playing instruments, and creating activities. Also, the researcher addressed musical activities focused on elements of music such as dynamics (louder/softer), tempo (faster/slower), timbre, rhythm (longer/shorter), beat, accent, meter, phrase, form,

and pitch (higher/lower/repeat). The lesson plans emphasized engaging students in exploration, improvisation, and creative musical play.

To examine the effects of a movement-based after-school music program on music underachievers' musical achievement, social development, and self-esteem in Korean primary schools, three research questions were posed:

1. Is there a significant difference in musical achievement test scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?
2. Is there a significant difference in social development test scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?
3. Is there a difference in self-esteem scores between music underachievers who participate in a movement-based after-school music program and music underachievers who do not participate?

The researcher administered Colwell's Music Achievement Test 1 (MAT) to measure musical achievement, Kim's Social Development Scale (SDS) to measure students' social development, and Hare's Self-Esteem Scale (HSS) to measure self-esteem. All measures were administered as pretests and posttests. An analysis of covariance (ANCOVA) was utilized to test the null hypotheses for each research question. For each ANCOVA, the posttest data were the dependent variable, group was the independent variable, and pretest data was the covariate. The alpha level was set at .05.

An analysis of covariance (ANCOVA) on the MAT posttest scores using the MAT pretest as the covariate indicated a significant difference ( $F = 5.178$ ,  $p > .026$ ) between treatment and control groups. Adjusted means show that the difference is in favor of the treatment group ( $M = 32.26$ , treatment;  $M = 30.19$ , control). The treatment was effective in improving the music achievement of music underachievers who participated, as compared to those who did not participate. Further examination of MAT pretest and posttest scores indicated that all means increased from the pretest to the posttest for both treatment and control groups for all subtests and for the MAT total.

An analysis of covariance (ANCOVA) on the SDS posttest scores was conducted using the pretest SDS scores as a covariate. Results indicated there was no significant difference ( $F = .205$ ,  $p < .652$ ) between treatment ( $M = 133.94$ ,  $SD = 24.81$ ) and control groups ( $M = 145.91$ ,  $SD = 24.86$ ).

An analysis of covariance test (ANCOVA) on the HSS posttest scores using HSS pretest scores as the covariate indicated there was no significant difference ( $F = .026$ ,  $p < .871$ ) between treatment ( $M = 91.64$ ,  $SD = 9.20$ ) and control group ( $M = 93.03$ ,  $SD = 12.57$ ). Levene's Test of Equality of Error variances was .012, indicating that assumptions were not met.

Based on these results, the following conclusions can be reached: music underachievers benefited from the movement-based after-school music program. These findings indicate that the after-school music program had a positive effect on music underachievers' musical achievement.

Although school and gender were not treated as independent variables in this study due to low cell sizes, descriptive data for school and gender were provided as a matter of interest and as potential directions for further study. MAT pretest to posttest means increased in all three schools: A school treatment group from pre-test ( $M = 26.42$ ,  $SD = 3.86$ ) to post-test ( $M = 34.00$ ,  $SD = 4.12$ ); B school treatment group from pre-test ( $M = 30.16$ ,  $SD = 3.90$ ) to post-test ( $M = 33.50$ ,  $SD = 2.87$ ); C school treatment group from pre-test ( $M = 28.33$ ,  $SD = 3.89$ ) to post-test ( $M = 31.25$ ,  $SD = 5.01$ ). This may indicate that the treatment is effective regardless of school. Further research with larger sample sizes is needed to examine school effects.

All students continued to participate in their regular school music classes during this study. It is interesting to note that the students in A and B school seem to have increased more than students in C school. In A and B schools, the regular music classes are taught by music specialists. In C school, there is no music specialist; the classroom teachers teach the music class. This may indicate that music specialist teachers are more effective in delivering music instruction than classroom teachers. Further research should be conducted to examine this question.

Treatment and control groups for this study were determined by MAT scores and random assignment, not by SDS scores. The researcher used the same treatment and control groups throughout the study for all dependent variables. Treatment and control group mean scores were very different on both the pretest and posttest SDS means. It is interesting to note that the posttest means increased



for the treatment group and decreased for the control group: the treatment group from pre-test ( $M = 132.39$ ,  $SD = 22.91$ ) to post-test ( $M = 133.93$ ,  $SD = 24.81$ ); the control group from pre-test ( $M = 147.60$ ,  $SD = 22.57$ ) to post-test ( $M = 145.90$ ,  $SD = 24.85$ ). Although no significant difference was found, the direction of change is in favor of the treatment group. Further research should consider a longer treatment time to consider the effects of treatment on social development. Also a similar randomized design with groups matched by pretest SDS scores should be considered.

The HSS pretest and posttest means for treatment and control groups were very similar and changed very little between pretest and posttest. It is interesting to note that the means increased for the treatment group from pre-test ( $M = 91.21$ ,  $SD = 9.37$ ) to post-test ( $M = 91.63$ ,  $SD = 9.20$ ), and decreased for the control group from pre-test ( $M = 93.30$ ,  $SD = 9.03$ ) to post-test ( $M = 93.03$ ,  $SD = 12.57$ ). Further, girls' mean scores in the treatment group increased but boys' mean scores decreased, whereas in the control group, both male and female groups decreased the total HSS mean scores decreased. Further research that examines the treatment by gender is needed.

### **Conclusions and Implications**

The purpose of this study was to examine the effects of a movement-based after-school music program (MAMP) on music underachievers' musical achievement, social development, and self-esteem in Korean primary schools. In this study, the treatment for music underachievers included movements such as singing games with multicultural songs, playing instruments, and creating

activities derived from or based upon Dalcroze, Kodály, and Orff pedagogies. Results of this study show that music underachievers' music achievement improved as a result of the treatment. Results were not significant for social development and self-esteem, but for both tests, mean scores of the treatment group increased and the mean scores of the control group decreased. These results suggest that music instruction that included movement is effective for music underachievers.

This after-school music program emphasized movement. The classroom and materials should be carefully considered when creating movement lesson plans, as movements and musical activities require a big space. Space should be appropriate for the size of the group. In this study, large classroom with no desks in A and B schools worked well, but in C school a larger room for fewer students required more adjustment.

As shown in the 14 lesson plans of this study, various movements using the MAMP provided music underachievers with opportunities to explore musical experience in new ways. These musical experiences included explorations, improvisation, and musical play with movement. The results of this study show that these kinds of experiences can be helpful in supporting music underachievers' developing musical abilities. Although no significant difference were found for SDS and HSS, the researcher observation of the music underachievers' performances with other students indicated that music underachievers can develop their sociality and self-esteem with their peers during the MAMP. Students enjoyed the musical and movement activities, and peer to

peer interactions improved for some students. Therefore, the MAMP using movements based on musical activities may encourage music underachievers in social development and self-esteem given more time.

In Im's study (2009) regarding after-school music programs, most music teachers assumed indifferent attitudes while principals showed higher interest. Im also indicated that the after-school music programs help students to cultivate positive emotions because students were mainly involved in collective activities resulting in improved sociality and sense of collaboration. In this study, the researcher found that the movement-based after-school music program helped music underachievers to increase their music achievement. Increased music achievement may lead, over a longer time, to increase self-esteem and sociality (Hallam, 2010).

Selecting appropriate movement activities and designing proper teaching methods for this study involved considering the developmental state of music underachievers. Merrifield (2006) reports that simultaneous singing and moving builds neuronal connection in a child's brain, and that working together to play a singing game helps children learn how to interact with others and how to be a part of a social group. Other researchers have shown that movement is important in music of learning of young people (Jone, 1992; Cheek, 1979; Martinovic-Trejgut, 2010; Shehan, 1990). Results of this study may lead to more effective pedagogical techniques and methods for learning musical skills for music underachievers and perhaps for other students as well.

### **Limitations of the Study and Suggestions for Future Research**

In the discussion section of this chapter, several suggestions were made for future research. These suggestions include a larger sample size to investigate the effects of gender and schools. Also, a longer treatment time may need to investigate for effects of social development and self-esteem for music underachievers. This study could also be replicated with younger students.

One of the limitations of this study was parents' attitudes toward after-school music programs. The school officials in charge of after-school programs and school principals encourage students to participate in after-school programs, but the researcher found that some parents hesitated to send their children to the after-school programs because they do not believe the effects of the after-school programs. Other parents want their children to study school subjects that they think are more than music or arts. Parents' attitudes toward after-school programs should be investigated.

The researchers' music program using movement based on musical activities and singing games was new in after-school programs in Korea at the time of this study. A future study comparing the effects of this after-school music program to other kinds of after-school music program should be conducted.

Some researchers have found a relationship between home environment, including parent background, and student underachievement (Kim, 2001). The variables of home environment and parent background were beyond the scope of this study. Future research should investigate these variables.

Teacher preparation attitudes about and preparation for working with underachieving students may also be related variables. The researcher also recommends, for further research, a large-scale study of Korean music teachers' attitudes about and preparation for working with underachievers in music, and a large-scale cross-cultural study of Korean and American music teachers' attitudes about and preparation for working with underachievers in music.

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APPENDIX A

SCHOOL'S PRINCIPAL PERMISSION LETTERS

# 위 축 장

## 윤 관 기

귀하를 음악 성취도 향상 및  
사회성 함양을 위한 음악 활동  
프로그램 강사로 위촉합니다.

(위촉기간:2011.4.11-2011.7.16)

2011년 4월 4일

# 위 축 장

윤 관 기

귀하를 음악 성취도 향상 및 사회성 함양  
을 위한 음악 활동 프로그램 강사로  
위촉합니다.

(위촉 기간 : 2011. 3. 14. ~ 2011. 7. 16.)

2011년 3월 11일



# 위촉장

윤관기

귀하를 음악성취도 향상 및 사회성 함양  
을 위한 음악활동 프로그램 강사로 위  
촉 합니다.

(위촉기간 : 2011. 3. 2 ~ 2011. 7. 16.)

2011년 2월 28일

APPENDIX B  
PARENTAL CONSENT LETTER

Dear Parent:

I am your child's music teacher in the after-school music program at \_\_\_\_\_ Elementary School. I am also a graduate student under the direction of Professor Sandra Stauffer in the School of Music at Arizona State University in the United States. I am conducting a research study to determine the effectiveness of after-school music programs for Korean children.

I am inviting your child's participation in the study, which examines the effectiveness of after-school music programs for Korean children. To participate, your child will attend the after-school program and participate in the activities and tests that are part of the program. Your child's participation in this study is voluntary. If you choose not to have your child participate or to withdraw your child from the study at any time, there will be no penalty. Likewise, if your child chooses not to participate or to withdraw from the study at any time, there will be no penalty. The results of the research study may be published, but your child's name will not be used.

Although there may be no direct benefit to your child, the possible benefit of your child's participation is the potential for their own musical growth. The research I am conducting may help me and other music teachers develop programs that benefit children. There are no foreseeable risks or discomforts to your child's participation.

My study does not look at individual children. When I analyze the results, all of the children's scores will be averaged together. In my study, I will report only average or mean scores from the music program. The results of this study may be used in reports, presentations, or publications but your child's name will not be known. Individual children's assessment scores and activities will not be reported in this study.

If you have any questions concerning the research study or your child's participation in this study, please call me at 010-6776-6338, or you may contact Professor Sandra Stauffer in the United States ([s.stauffer@asu.edu](mailto:s.stauffer@asu.edu)).

Sincerely,

Gwan Ki Yun

By signing below, you are giving consent for your child \_\_\_\_\_  
(Child's name) to participate in the above study.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

If you have any questions about you or your child's rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX C  
CHILD ASSENT FORM



I have been told that my parents have given permission for me to take part in the after-school music program.

I will be asked to participate in the activities and assessments that are part of the after-school music program.

I am taking part because I want to. I know that I can stop at any time if I want to and it will be okay if I want to stop.

---

Sign Your Name Here

---

Print Your Name Here

---

Date

APPENDIX D  
LESSON PLANS

**Week One (March 14 ~ 18)**  
**Session Title: Brain Station**

- ❖ **Station:** The idea of train station is that students will travel with the researcher and they arrive at a special station every week. Every station has their own name, and the researcher prepares 14 stations and each station will show what students learn and play.

**Objectives:**

- \* Students will greet each other with a greeting song composed by the researcher.
- \* Students will copy the brain activities with songs, and they will learn two pitches 'sol' and 'mi'.
- \* Students will sing a song "Snail Snail" translated into Korean and will play a movement game using a parachute.

**Movements:**

- \* Brain Gym movements (Cross Crawl, Hook-ups, Energy Yawn, Thinking Cap, Lazy 8's for Eyes, and the Elephant). (From *Smart Moves*, Carla Hannaford, 2005)
- \* Singing game with a parachute, an American song, "Snail Snail" (달팽이야 달팽이야)

**Procedures:**

- 1) Teacher introduces the after-school music program called by a special travel with musical movement and games.
- 2) Teacher sings a greeting song composed of two pitches (sol and mi), and students exchange greetings with peers.
- 3) Teacher gives a label to each student, and the teacher let them write their name on the label. Students put the name label on their chest and remember their friends' names.
- 4) Teacher explains what kind of motions will help to increase their brain activity and shows several motions.
- 5) Students copy the teachers' motions, and then they find a partner for playing the same motions. (Hook-ups, Cross Crawl, Energy Yawn, Thinking Caps, and Eight Eyes)
- 6) After students copy the movements, the teacher sings an American song "Snail Song" (달팽이야 달팽이야) translated into Korean. Teacher shows a parachute and explains a game using the musical concept of tempo. Students play the game with the teacher.
- 7) Teacher sings a goodbye song with students' names.

## **Week Two (March 21 ~ 25)**

### **Session Title: Body Percussion Station**

#### Objectives:

- \* Students will express various rhythms using their body.
- \* Students will experience and identify what the body percussion is and how they make body sounds.
- \* Students will copy the teacher's body percussion.
- \* Students will learn the rhythms and create their own body percussion.

#### Movements:

- \* Train driver
- \* Body percussion
- \* Musical activity with a Korean song, “둥글게 둥글게” (“Round and Round”)

#### Procedures:

- 1) Students enter the classroom and sing the greeting song.
- 2) Teacher leads students with a movement like a train driver and shows them how to keep their steady beats.
- 3) Teacher introduces four beats of steady beats to students before he shows several motions of body percussion.
- 4) Teacher describes and shows simple body percussion using his foot and hands, and asks students to copy the teachers' movement.
- 5) Students copy and describe their body percussion with a partner or groups.
- 6) After students are accustomed to simple body percussion, the teacher shows a little more complex motions and encourages students.
- 7) Teacher introduces a Korean song “둥글게 둥글게” (“Round and Round”) with a movement game.
- 8) Students sing the song, and the teacher divides them into two groups. One group makes a big circle, and the other group scatters throughout the classroom. While students sing the song, the teacher plays a temple block.
- 9) Teacher suddenly gives a sign, and the students as gatekeepers put down their hands. The game continues until one student is left in the outside of circle.

둥글게 둥글게 (Round and Round)

Suin Lee

경쾌하게

둥글게 둥글게 둥글게 둥글게 빙글빙글돌아가며 춤을춤시다  
 손뼉을치면서 노래를부르며 할리할리즐거움게춤추자  
 링가링가링가링가링가링 링가링가링가링가링가링  
 손에손을잡고모두다함께즐거움게워어쁨시다 D.C.

**Week Three (March 28 ~ April 1)**  
**Session Title: Voice Exploration Station**

**Objectives:**

- \* Students will introduce and express individually their own voice.
- \* Students will create their own voice map and show to peers.
- \* Students will recognize playing loud, soft, high and low sounds.
- \* Students will learn a Korean song and play a movement game.

**Movements:**

- \* Body percussion with canon and ostinato
- \* Musical activity with a Korean song, “노래는 즐겁다” (“Singing Is Happy”) translated from German.

**Procedures:**

- 1) Students enter the classroom and copy the teacher’s motion using the body percussion.
- 2) Students create a new sequenced motion and teach the body percussion to their partners or groups.
- 3) Teacher makes several groups and briefly explains the meaning of canon. Students play body percussion in canon.
- 4) Teacher prepares a voice map and shows how to read and how to express the voice map with a lip puppet.
- 4) Students express their voice and sing accurately and with good breath control throughout their singing ranges.
- 5) Teacher gives a blank sheet to students and lets them make their own voice maps.  
After they make the voice maps, teacher encourages students in performing their maps.
- 6) Students listen to a Korean song, “노래는 즐겁다” (“Singing Is Happy”) and repeat the song.
- 7) Teacher prepares a singing game called 치킨을 차지해라 (“Take a Chicken”) using the same melody. Teacher makes two wolves and separates them from two circles. Teacher explains the game rules and how to play the singing game.

노래는 즐겁다 (Singing Is Happy)

Unknown

노래는 즐겁고 나 - 산 너미길 나무들이 울 - 창 한이산 에  
가 고 갈 수 목 산 새 들 이 즐 거 이 노 래 해  
햇 빛 은 나 못 잎 새 로 반 짝 이 며 우리 들 의 노 래 는 즐 겁 다

**Week Four (April 4 ~ 8)**  
**Session Title: Tempo Station**

**Objectives:**

- \* Students will sing two multicultural music songs.
- \* Students will move to slow and quick tempo with rhythm sticks.
- \* Students will describe and experience the musical element of tempo.

**Movements:**

- \* Moving with rhythm sticks and throwing tennis balls with two songs

**Procedures:**

- 1) Teacher introduces a Maori song, “Epo I Tai Tai E” from New Zealand and asks students to find a partner.
- 2) Students sing the song, and teacher shows an appropriate musical activity and explains a movement of how to hand a rhythm stick to a peer.
- 3) Students pass a rhythm stick to peer who is sitting next to them and teacher asks students to pass the stick from slow to quick.
- 4) Teacher encourages students to sing the song and play the movement with slow and quick tempo.

**Epo I Tai Tai E**

The image shows two staves of musical notation for the Maori song "Epo I Tai Tai E". The first staff is in 4/4 time and contains the melody for the first line of the song. The lyrics "E - po i tai tai e - E - po i tai tai e -" are written below the notes. The second staff starts with a measure rest labeled "5" and contains the melody for the second line of the song. The lyrics "E - po i tai tai E - po i tu - ki tu - ki, E - po i tu - ki tu - ki e." are written below the notes.

Maori song from New Zealand.

- 5) Teacher introduces a new Akan song, “Obwisana Sa” form Ghana and explains the second musical movement.
- 6) Teacher asks student to make a big circle and shows a tennis ball.
- 7) Teacher sings the Akan song and gives a demonstration of throwing a tennis ball at a student. The student throws the ball to other students.
- 8) When students are very good at handling one ball, teacher adds more tennis balls to the circle. Through singing and movement, the teacher explains a musical element of tempo or speed.





**Week Five (April 11 ~ 15)**  
**Session Title: Music Box Station**

**Objectives:**

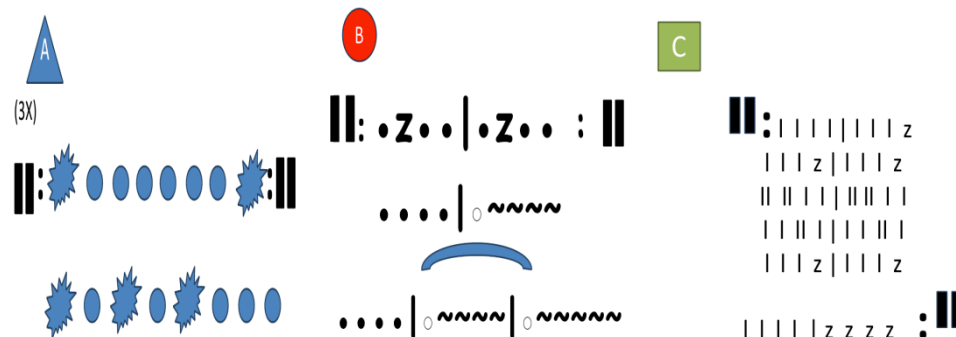
- \* Students will describe various musical sounds and instruments sounds.
- \* Students will discuss what a rondo form is.
- \* Students will play several percussion instruments with the *Carmen Overture*, by Bizet.
- \* Students will create and perform a body movement with the *Hungarian Dance 5*, by Brahms.

**Movements:**

- \* Body movement
- \* Ensemble of percussion instruments

**Procedures:**

- 1) Teacher gives a color paper with a written alphabet letter to each student and makes a line.
- 2) Teacher shows a chart of melodic structure that mentioned a motive, phrase, period and repetition.
- 3) Students make a group and express the melodic structures
- 4) Teacher shows a rondo form and students listen to the *Carmen Overture*.



- 5) Teacher hands out some percussion instruments such as egg shakers, woodblocks, tambourines, finger symbols, rhythm sticks, and hand bells.
- 6) Students play the ensemble and teacher picks a student as a conductor. The student conducts the ensemble.
- 7) After collecting the percussion instruments, teacher shows a body movement with the *Hungarian Dance 5*.
- 8) Students copy and repeat the teacher's body movement and perform with music.

**Week Six (April 18 ~ 22)**  
**Session Title: Timbre Station**

**Objectives:**

- \* Students will recognize various orchestral instruments.
- \* Students will be able to classify instruments by families.
- \* Students will identify all types of ensembles and names of instrument.
- \* Students will be able to explain the distinguishing characteristics of the woodwind, brass, string, and percussion families.
- \* Students will be able to describe tempo and dynamics in the listening selections.
- \* Students will distinguish and describe the definition of the word “timbre”.

**Movements:**

- \* Survival quiz show
- \* Singing game with a Korean song, “그대로 멈춰라” (“Stop as Right Now)

**Procedures:**

- 1) Teacher shows each instrument picture, one by one, showing the students what the instrument looks like and how players hold it and introduces each instrument’s family.
- 2) Teacher reads the poster “Woodwind, Brass, String, and Percussion Family” to the class. Teacher explains the word ‘timbre,’ and shows the each instruments related with the song.
- 3) Teacher emphasizes the idea that they used to be made of wood or brass and they all use a reed, a mouth piece, and a bow to produce the instrument sound.
- 4) Students listen to “The Young Person’s Guide to the Orchestra.”
- 5) Students find the family groups in the pictures and match the instrument groups
- 6) Teacher distributes some different size papers and sings a Korean song, “그대로 멈춰라” (Stop as it is). When teacher gives a name of the instrument family with numbers, students make a group that composed two to five students like a woodwind family on the paper.

그대로 멈춰라 (Stop as Right Now)

김방욱 작사  
김방욱 작곡

즐 겁 게 춤 을 추 다 가 그 대 로 멈춰 라  
 는 도 감 지 말 고 웃 지 도 말 고 울 지 도 말 고 움 직 이 지 마  
 즐 겁 게 춤 을 추 다 가 그 대 로 멈춰 라  
 즐 겁 게 춤 을 추 다 가 그 대 로 멈춰 라

7) Students play a survival quiz show that asks students solve a question, and teacher gives the instrument quizzes to them.

**Week Seven (April 25 ~ 29)**  
**Session Title: Miter Station**

**Objectives:**

- \* Students will recognize a concept of meters.
- \* Students will learn how to play meter as a conductor.
- \* Students will experience and perform a folk dance.

**Movements:**

- \* Singing game with a Korean song, “우리집에 왜 왔니?” (“Why Are You Coming to My Home?”)
- \* Body movement with steady beat
- \* Movement with “Seven Jumps” dance

**Procedures:**

- 1) Teacher introduces body movements with steady beat. Teacher leads students and makes a circle.
- 2) Students follow the teacher’s direction and copy teacher’s movements.
- 3) Teacher prepares rhythmical moving to the recording of “Seven Jumps” and does the movement with students.
- 4) Teacher asks students what they learned about meters during school years. Teacher sings several songs related to the meters, and students recall the songs and sing.
- 5) Teacher shows an icon chart of conducting to students and asks students to conduct the meters.
- 6) Teacher introduces a singing game with the Korean song, “우리집에 왜 왔니?” (“Why Are You Coming to My Home?”). Teacher separates two groups. One group counts the beat 1-2 and the other group counts the beat 1-2-3-4. Students play the singing game.

우리집에 왜 왔니 (Why Are You Coming to My Home?)

우 리 집 에 왜 왔 니 왜 왔 니 왜 왔 니

꽃 찾 으 러 왔 단 다 왔 단 다 왔 단 다

**Week Eight (May 9 ~ 13)**  
**Session Title: Folk Dance Station**

**Objectives:**

- \* Students will learn folk dance.
- \* Students will make their own dance chart and perform with peers or groups.
- \* Students will describe their movement and how they play the folk dance.

**Movements:**

- \* Folk dance with “Swedish Folk Song” (*Rhythmically Moving 2*, High and Scope Press)

**Procedures:**

- 1) Teacher introduces what the folk dance is and asks students to take a partner. Teacher shows a movement of folk dance to students with a rhythmical moving song.
- 2) After students played the folk dance, teacher gives a blank sheet of paper to students and explains how they make their own folk dance.
- 3) Teacher shares ideas of folk dance about actions, movements, and motions with students. Teacher encourages students to create various movements.
- 4) Students create the folk dance and discuss the motions with peers or groups
- 5) After ten minutes, students perform their own creation.

**Dance with Squares**

Dance with Squares #1 Scattered Formation							
jump	jump	jump	jump	walk	walk	walk	walk
jump	jump	jump	jump	walk	walk	walk	walk
down	up	down	up	down	up	down	up
pat	2	3	4	clap	2	3	4

**Week Nine (May 16 ~ 20)**  
**Session Title: Kodaly Station**

**Objectives:**

- \* Students will learn the hand signs and body scales
- \* Students will recognize the concept of note and enjoy a game using scale cards.
- \* Students will play a singing game.

**Movements:**

- \* Movement game used five notes
- \* Singing game with a Korean song, “학교종이 땡땡땡” (“The School Bell is Ringing Ringing Ringing”)

**Procedures:**

- 1) Teacher asks students to sing a popular children’s song.
- 2) Teacher introduces who is Kodaly, shows rhythmic icon cards, and helps them to make a scale using hand signs.
- 3) Students sing the song using their body.  
 (Do-shin, Re-knee, Mi-thigh, Fa-waist, Sol-stomach, La-shoulder, Ti-head, Do’-overhead)
- 4) Teacher introduces a singing game 볼륨을 높여라 (“Turn Up the Volume”). Students make a big circle and teacher appoints a tagger and a student who is sitting among students. Students sing a Korean song, “학교종이 땡땡땡” (“The School Bell is Ringing Ringing Ringing”). The tagger covers his/her eyes. When the tagger gets close to the student, students sing loudly and when the tagger gets move away from the student, students sing silently.

학교종이 땡땡땡 (“The School Bell is Ringing Ringing Ringing”)

학 교 종 이 땡 땡 땡 어 서 모 이 자

선 생 님 이 우 리 를 기 다 리 신 다

- 5) Teacher prepares a big five staff on the ground and shows some note cards.
- 6) Teacher makes two groups and shows note cards to students. Then, students make the note on the big five staff and show their body scale to the teacher.

**Week Ten (May 23 ~ 27)**  
**Session Title: Rhythm Station**

Objectives:

- \* Students will recognize the musical concept of rhythm.
- \* Students will learn how to count rhythmic notes.
- \* Students will play a treasure hunt and rhythm dice game.

Movements:

- \* Treasure hunt game
- \* Rhythm diceplay

Procedures:

- 1) Teacher shows a rhythm chart written by Kodály. Teacher teaches how to count using Kodály rhythm syllables. Kodaly used the work “ta” to represent the quarter note and “ti ti” to represent two eighth note.
- 2) Teacher lets students know where the rhythm treasure cards are hidden and students find hidden the cards in the class room.
- 3) While students find the treasure cards, students who already found the cards bring the cards to teacher. Students play the rhythm using rhythm syllables.
- 4) After students played the treasure hunt game, teacher brings two big rhythm dice to students in the center of classroom.
- 5) Teacher divides students into two groups. Teacher explains the game rule and students decide who rolls the dice. Students roll the rhythm dice and perform the rhythm after the dices stop the rolling.



## **Week Eleven (May 30 ~ June 3)**

### **Session Title: Recorder Instrument Station**

#### Objectives:

- \* Students will recall the Kodaly' rhythm
- \* Students will learn how to play the recorder.
- \* Students will create a melody with teacher
- \* Students will play some recorder songs accompanied by rock music.

#### Movements:

- \* Rhythm footprints
- \* Mirror game with a Korean song, “나처럼 해봐요” (“Just Follow What I Am Doing”)

#### Procedures:

- 1) Teacher puts rhythm footprints on the floor.
- 2) Teacher shows how to count rhythms and students imitate teachers' movements.
- 3) Teacher plays C major scale on the recorder (If they already know those scales, teacher teaches D and G major scales).
- 4) Every student takes turn performing his/her own creative recorder melody.
- 5) Teacher prepares some recorder songs (8 more easy songs by Don Muro)
- 6) Students play the recorder all together.
- 5) Teacher shows a mirror game with a Korean song, “나처럼 해봐요” (just follow what I did).

나처럼 해봐요 (Just follow what I am doing)



나 처 럼 해 봐 요 이 령 계



나 처 럼 해 봐 요 요 령 계



나 처 럼 해 봐 요 이 령 계



아 이 참 재 미 있 다

6) Teacher divides students into A and B groups and explains how to play the singing game. Students in A group make their own creative motion and students in B group copy.

**Week Twelve (June 6 ~ 10)**  
**Session Title: Orff Instruments Station**

**Objectives:**

- \* Students will understand what the Orff instruments are.
- \* Students will choose and perform the Orff instruments according to the melody icon cards.
- \* Students will play the Dance Dance Revolution (DDR) game with Orff instrument groups.
- \* Students will sing melody and simple rhythmic patterns and take part in the song of ‘Mary Ann.’
- \* Students will perform the entire story with the Orff instruments.

**Movements:**

- \* Rap ostinato
- \* Dance Dance Revolution (DDR) game

**Procedures:**

- 1) Teacher prepares the Orff instruments in the classroom.
- 2) When students enter the classroom, teacher shows a caution chart about how students should deal the Orff instruments and hold the sticks.
- 3) Students choose the instrument what they want and play the instruments for 2 minutes.
- 4) Teacher shows a music score that is separated by six parts with SM, AG, SG, AX, BX, Guiro, Bongos, and Conga.
- 5) Before they play the Orff instruments, teacher introduces a rhythm speech “가자 해변으로” (“Rap Ostinato”) to students.
  - AX: 가자 해변으로 가자 놀러가, go to the beach go to the beach
  - Guiro: 예 예 예 랫츠고, yay yay yay let’s go
  - Bongos: 썬크림을 발라주세요크림, please put some sunblock
  - Conga: 핫뜨거뜨거 핫뜨거뜨거뜨거핫 hot hot hot hot
  - BX: 수영 하고싶어요 I want to swim

Fun in the Sun

Arr. M. Wood

The musical score is for the song "Fun in the Sun" by M. Wood. It is written in 2/4 time and consists of six staves. The top staff is for the vocal line, labeled "/SM/AG/SG". The second staff is for the Alto Saxophone (AX), with lyrics in Korean: "가 자 해 번 으 로 가 자 눈 러 가 가 자 해 번 으 로 가 자 눈 러 가". The third staff is for the Guiro, with lyrics: "에 에 에 영 조 고 에 에 에 리 고". The fourth staff is for Bongos, with lyrics: "선 크 린 준 땀 누 세 로 크 린 선 크 린 준 땀 누 세 로". The fifth staff is for the Conga, with lyrics: "갓 따 기 따 기 갓 갓 따 기 따 기 갓 갓 따 기 따 기 갓". The bottom staff is for the Bass Xylophone (BX/CBB), with lyrics: "수 영 가 고 쫄 기 로 수 영 가 고 쫄 기 로".

- 6) Teacher gives a time that students practice their parts to “Fun in the Sun.”
- 7) Students play “Fun in the Sun.”
- 8) Teacher prepares a foot board and divides four groups; a metal xylophone group, a wood xylophone group, a metal percussion group, and a wood percussion group.
- 9) Teacher calls a leader who performs all Orff instruments out to, and the student leader play the DDR in front of the other students.
- 10) Students play with the leader and experience the Orff instrument sound.

**Week Thirteen (June 13 ~ 17)**  
**Session Title: Music Story Song Station I**

**Objectives:**

- \* Students will take a part of the actor and rehearse the “Magic Stick of the Goblin” based on a Korean folk story.
- \* Students will understand what they perform and act their parts.
- \* Students will prepare the performance.

**Movements:**

- \* Music and movement for the story

**Procedures:**

- 1) Teacher prepares stage costumes and props, and teacher sets up a theater stage.
- 2) When students are coming to the classroom, teacher casts students as two narrators, two brothers, and three goblins in the role of the “Magic Stick of the Goblin” based on a Korean folk story.
- 3) Teacher shows a music score to students who play the instruments and students practice their parts.
- 4) Teacher and students who are assigned a role rehearse the entire story, and students play the instruments.

**Week Fourteen (June 20 ~ 24)**  
**Session Title: Music Story Song Station II**

**Objectives:**

- \* Students will understand what they perform and act their parts.
- \* Students will play the “Magic Stick of the Goblin” based on a Korean folk story.

**Movements:**

- \* Music and movement for the story

**Procedures:**

- 1) Teacher prepares stage costumes and props, and teacher sets up a theater stage.
- 2) Teacher helps students in performing the story song and assists students to play the instruments.
- 3) Students perform the “Magic Stick of the Goblin” with peers.
- 4) After students play the whole story, teacher asks students who want to change their roles from actors to players. Then, students play the whole story again.
- 5) Teacher asks about their feeling after performing and requests that students arrange and move the instruments.
- 6) Teacher makes a big circle and discusses the story song and how they feel with students.
- 7) Teacher exchanges greetings with students and presents all students an award certificate.

APPENDIX E  
MUSIC ACHIEVEMENT TEST (COLWELL)

**TEST 1 <Part 1 – Pitch Discrimination>**

Part 1 of the test has two subtests. Each subtest measures your ability to hear the difference between higher and lower sounds.

Subtest a (*Two Tones*)

Two examples will be played. Answer the second example to make sure that you understand what you are to do. There is only one correct answer for each question.

Example A

The second tone was higher than the first tone. Notice that the answer blank “2” had been filled in.

**PART 1—PITCH DISCRIMINATION**

Subtest a (Two Tones): Compare two tones. Decide which is higher (1 or 2) or whether both tones are the same (5).	
EX. A <input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5	1 1 2 3    2 1 2 3    3 1 2 3    4 1 2 3    5 1 2 3    6 1 2 3

Subtest b (*Three Tones*)

Three single tones will be played. You are to choose the lowest tone.

Example A

The first tone was the lowest tone. Notice that answer blank “1” has been filled in. (p. 86-7)

Subtest b (Three Tones): Compare three tones. Decide whether the first (1), second (2), or third (3) is lowest.	
EX. A <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3    EX. B <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	16 1 2 3    17 1 2 3    18 1 2 3    19 1 2 3

**<Part 2 – Interval Discrimination>**

The second part of the test measures your ability to hear the difference between tones that are next to each other as in a scale and tones that leap, or skip, from one to another.

Subtest a (*Three Tone Patterns*)

A three-tone pattern will be played. If all the tones in a pattern move step by step, fill in the blank marked “S”.

Example A

The first pattern moved step by step like a scale. Notice that the answer blank “S” has been filled in.

**PART 2—INTERVAL DISCRIMINATION**

Subtest a (Three-Tone Patterns): Listen to a three-tone pattern. Decide if pattern is scalewise (S), if pattern leaps (L), if in doubt (?).	
EX. A <input checked="" type="radio"/> S <input type="radio"/> L <input type="radio"/> ?    EX. B <input type="radio"/> S <input type="radio"/> L <input type="radio"/> ?	26 S L ?    27 S L ?    28 S L ?    29 S L ?



Subtest b (*Phrases*)

A musical phrase will be played. If most of the notes of the phrase move step by step, fill in the blank marked "S".

Example A

The phrase moved step by step. You should have filled in answer blank "S." (p. 88-9)

Subtest b (Phrases): Listen to a phrase. Decide if the phrase is generally scalewise (S), if phrase generally leaps (L), if in doubt (?).

EX. A  S  L  ?

36  S  L  ?    37  S  L  ?    38  S  L  ?    39  S  L  ?    40  S  L  ?

<Part 3 – Meter Discrimination>

The third part of this test measures your ability to hear the difference between music that moves in two and music that moves in three.

A phrase will be played. If the phrase moves in two- has two beats per measure or if you can count one-two for each measure, fill in the blank.

Example A

The phrase was in 2/4 meter and had two beats per measure.

Example B

The phrase was in 3/4 meter and had three beats per measure. (p. 89)

**PART 3—METER DISCRIMINATION**

Duple and Triple Meter: Listen to a phrase. Decide if it moves in two's (2), if it moves in three's (3), if in doubt (?).

EX. A  2  3  ?    EX. B  2  3  ?

54  2  3  ?    55  2  3  ?    56  2  3  ?    57  2  3  ?    58  2  3  ?    59  2  3  ?

**TEST 2 <Part 3 – Auditory-Visual Discrimination>**

Subtest a (*Pitch*)



This measures your ability to compare melodic notation with music that you hear. Follow the music written on your answer sheet and compare it with the music played on the record.

Example A

The second measure was written incorrectly. Notice that the blank below measure "2" has been filled in.

**PART 3—AUDITORY-VISUAL DISCRIMINATION**

Subtest a (Pitch): Listen to four measures. Fill in the blank below every measure played different in pitch from the notation. If all measures are correct, fill in the box marked 0.

EX. A:  EX. B: 

Subtest b (*Rhythm*)

This subtest measures your ability to compare rhythmic notation with music that you hear. Follow the music written on your answer sheet, and compare it with the music played on the record.

Example A

The third measure was written incorrectly. Notice that the blank below measure “3” has been filled in. (p. 118-9)

Subtest b (Rhythm): Listen to four measures. Fill in the blank below every measure played different in rhythm from the notation. If all measures are correct, fill in the box marked 0.

EX. A: 1 2  3 4 0

EX. B: 1 2 3 4 0

**TEST 3 <Part 4 – Instrument Recognition>**

Subtest a (*Solo Instruments*)

This subtest will measure your ability to recognize the sounds of various orchestral instruments. A short musical excerpt will be played by a solo instrument. Listen carefully and choose from the possible answers given on the answer sheet the corresponding instrument.

Example A

The music was played by a violin. You should have filled in the blank after “violin.”

**PART 4 — INSTRUMENT RECOGNITION**

Subtest A (solo instruments): Listen to a short musical selection featuring one musical instrument. Select from four choices the name of the instrument featured. If no one of the instruments is featured, fill in the blank marked 0.

EX. A: TRUMPET  BAROON  FR. HORN  VIOLIN  0

Subtest b (*Accompanied Instruments*)

This subtest will measure your ability to recognize the sounds of various instruments in an orchestral setting. A short orchestral excerpt will be played with one instrument featured. Listen, carefully, and then choose from the possible answers given on the answer sheet the name of the solo instrument featured.

Example A

The instrument featured was the flute. You should have filled in the blank after “flute.”

(p. 111-2)

Subtest B (accompanied instruments): Listen to a short musical selection featuring one instrument with orchestral accompaniment. Select from four choices the name of the instrument featured. If no one of the instruments is featured, fill in the blank marked 0.

EX. A: FLUTE  VIOLIN  CLARINET  FR. HORN  NONE

APPENDIX F  
SOCIAL DEVELOPMENT SCALE (KIM)

## Social Development

a= Strongly disagree

b= Disagree

c= Neutral

d= Agree

e= Strongly agree

1. I have no patience with something that goes against what's right.
2. I am practicing what I think it is right.
3. My friends believe my words.
4. My friends know that I am the sort of person to be trusted.
5. I honest say what I feel is right.
6. I make my own decisions when I think I am right.
7. I have taken control for myself with my own decisions.
8. I answer for something that I did and decided.
9. I always tell what I would like.
10. I plan to live the life that I really want.
11. I am a pretty good speaker when I stand in front of friends.
12. My friends come to visit me when they have a problem.
13. I am interested in leading a meeting.
14. My classmates selected me as leader of a group activity.
15. My friends often follow my ideas.
16. I repeat a difficult task until I do well.
17. I believe that if I really try, I can achieve my goal.
18. I make every possible effort no matter what I do.
19. I push forward by acting according to my belief.
20. I try to solve any kind of problems to the end.
21. I tend to express my feeling honestly.
22. I like a person who has clear opinions.
23. I feel comfortable when I come to school.
24. I calmly resolve whatever I do.
25. I feel comfortable when I meet my friends.
26. I am popular among my friends.
27. I enjoy good fellowship and intimacy with several types of friends.
28. I am fair with my friends.
29. My friends tell that I easily become close to anyone.
30. I tend to adapt to the new circumstances very well.
31. I want to help some people who work hard when I see them.
32. I am glad to help my friends when they need my help.
33. I like to help my friends.
34. I want to clean and pick up scattered garbage on the street.
35. I want to help aged people who carry a heavy burden.
36. I carefully return the property of others after I have used it.
37. I am a responsible person for my duty regardless of results.

38. I act for my goal after I set a goal.
39. I always fulfill a task allotted to me
40. I am observant of school rules.

APPENDIX G  
SELF-ESTEEM SCALE (HARE)

### HSS-Peer

In the blank provided, please write the letter of the answer that best describe how you feel about the sentence. These sentences are designed to find out how you generally feel when you are with other people your age. There are no right or wrong answers.

a= Strongly disagree

b= Disagree

c= Agree

d= Strongly agree

1. I have at least as many friends as other people my age.
2. I am not as popular as other people my age
3. In the kinds of things that people my age like to do, I am at least as good as most other people.
4. People my age often pick on me.
5. Other people think I am a lot of fun to be with.
6. I usually keep to myself because I am not like other people my age.
7. Other people wish that they were like me.
8. I wish I were a different kind of person because I would have more friends
9. If my group of friends decided to vote for leaders of their group, I'd be elected to a high position.
10. When things get tough, I am not a person whom other people my age would turn to for help.

### HSS-Home

11. My parents are proud of the kind of person I am.
12. No one pays much attention to me at home.
13. My parents feel that I can be depended on.
14. I often feel that if they could, my parents would trade me in for another child.
15. My parents try to understand me.
16. My parents expect too much of me.
17. I am an important person to my family.
18. I often feel unwanted at home.
19. My parents believe that I will be success in the future.
20. I often wish that I had been born into another family.

### HSS-School

21. My teachers expect too much of me.
22. In the kinds of things we do in school, I am at least as good as other people in my classes.
23. I often feel worthless in school.
24. I am usually proud of my report card.

25. School is harder for me than for most other people.
26. My teachers are usually happy with the kind of work I do.
27. Most of my teachers do not understand me.
28. I am an important person in my classes.
29. It seems that no matter how hard I try I never get the grades I deserve.
30. All in all, I feel I've been very fortunate to have had the kinds of teachers I've had since I started school.



APPENDIX H  
MAT SCORES OF STUDENTS

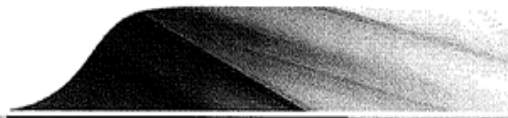
THE MAT SCORES OF TREATMENT GROUP OF THREE SCHOOLS

Treatment Group						
Student	School	Gender	MAT scores			Total
			1(PD)	2(ID)	3(MD)	
1-T	A	1	7	10	10	27
2-T	A	1	9	7	8	24
3-T	A	1	6	11	2	19
4-T	A	1	8	8	12	28
5-T	A	1	8	9	10	27
6-T	A	2	13	7	10	30
7-T	A	2	11	9	10	30
8-T	B	1	10	12	10	32
9-T	B	1	7	10	16	33
10-T	B	1	11	9	8	28
11-T	B	2	14	8	10	32
12-T	B	2	10	8	14	32
13-T	B	2	12	8	14	34
14-T	B	2	13	7	12	32
15-T	B	2	12	10	12	34
16-T	B	2	12	10	8	30
17-T	B	2	9	8	8	25
18-T	B	2	11	10	8	29
19-T	B	2	9	7	6	22
20-T	C	1	15	7	6	28
21-T	C	1	14	11	4	29
22-T	C	1	12	6	6	24
23-T	C	2	10	8	8	26
24-T	C	2	11	7	6	24
25-T	C	2	12	7	4	23
26-T	C	2	11	10	10	31
27-T	C	2	11	8	10	29
28-T	C	2	10	9	8	27
29-T	C	2	13	8	8	29
30-T	C	2	9	13	8	30
31-T	C	2	12	8	10	30
32-T	C	2	14	11	4	29
33-T	C	2	14	8	8	30

THE MAT SCORES OF CONTROL GROUP OF THREE SCHOOLS

Control Group						
Student	School	Gender	MAT scores			Total
			1(PD)	2(ID)	3(MD)	
1-C	A	1	10	9	8	27
2-C	A	1	12	10	8	30
3-C	A	1	13	7	10	30
4-C	A	1	13	7	8	28
5-C	A	1	8	8	6	22
6-C	A	2	6	11	10	27
7-C	A	2	9	10	6	25
8-C	B	1	7	13	6	26
9-C	B	1	3	9	10	22
10-C	B	1	9	6	12	27
11-C	B	2	12	7	10	29
12-C	B	2	10	7	8	25
13-C	B	2	15	6	8	29
14-C	B	2	8	8	10	26
15-C	B	2	8	8	12	28
16-C	B	2	6	8	12	26
17-C	B	2	10	10	14	34
18-C	B	2	13	11	10	34
19-C	B	2	13	11	10	34
20-C	C	1	11	10	10	31
21-C	C	1	13	13	2	28
22-C	C	1	9	14	4	27
23-C	C	2	13	8	10	31
24-C	C	2	10	10	10	30
25-C	C	2	11	4	8	23
26-C	C	2	3	10	12	25
27-C	C	2	11	12	8	31
28-C	C	2	15	3	4	22
29-C	C	2	10	6	12	28
30-C	C	2	13	9	6	28
31-C	C	2	8	8	12	28
32-C	C	2	7	8	8	23
33-C	C	2	11	8	12	31

APPENDIX I  
INSTITUTIONAL REVIEW BOARD (IRB)



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Office of Research Integrity and Assurance

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**To:** Sandra Stauffer  
MUSIC

**From:** Mark Roosa, Chair  
Soc Beh IRB

**Date:** 04/12/2011

**Committee Action:** Exemption Granted

**IRB Action Date:** 04/12/2011

**IRB Protocol #:** 1103006188

**Study Title:** The Effects of After School Music Program on Music Underachievers' Musical Achievement, Social Development, and Self-Esteem

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1).

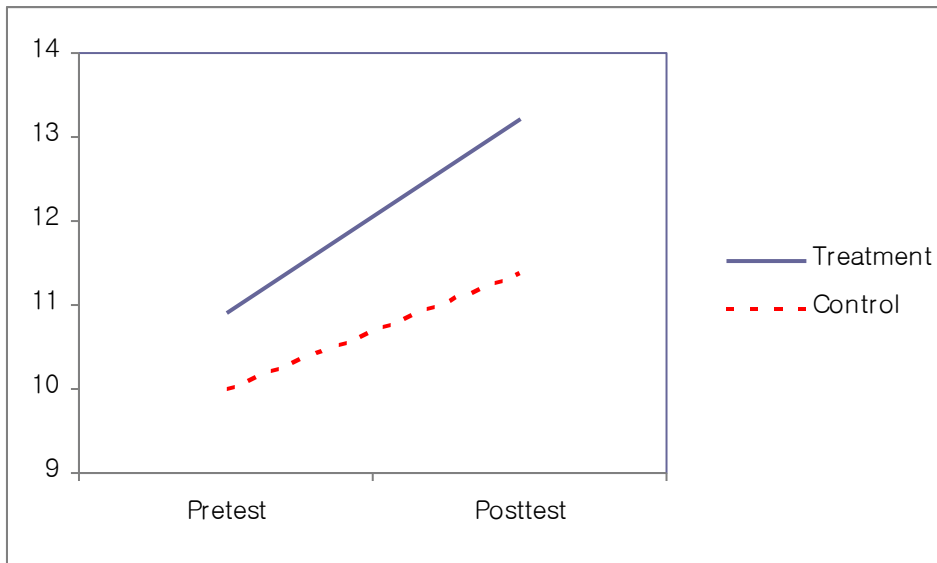
This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

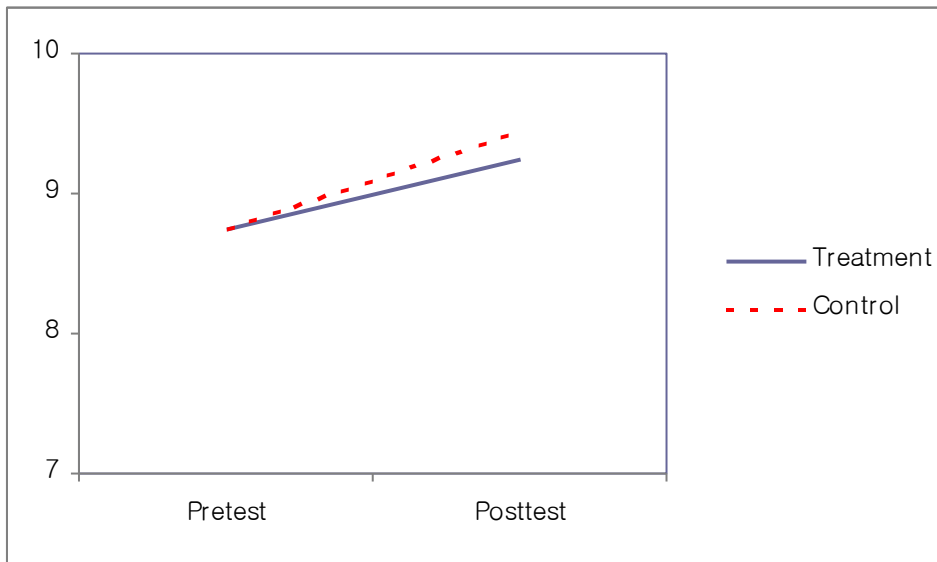
APPENDIX J  
PRETEST AND POSTTEST LINEAR GRAPHS OF  
THREE INSTRUMENTATIONS

## MUSIC ACHIEVEMENT TEST LINER GRAPHS

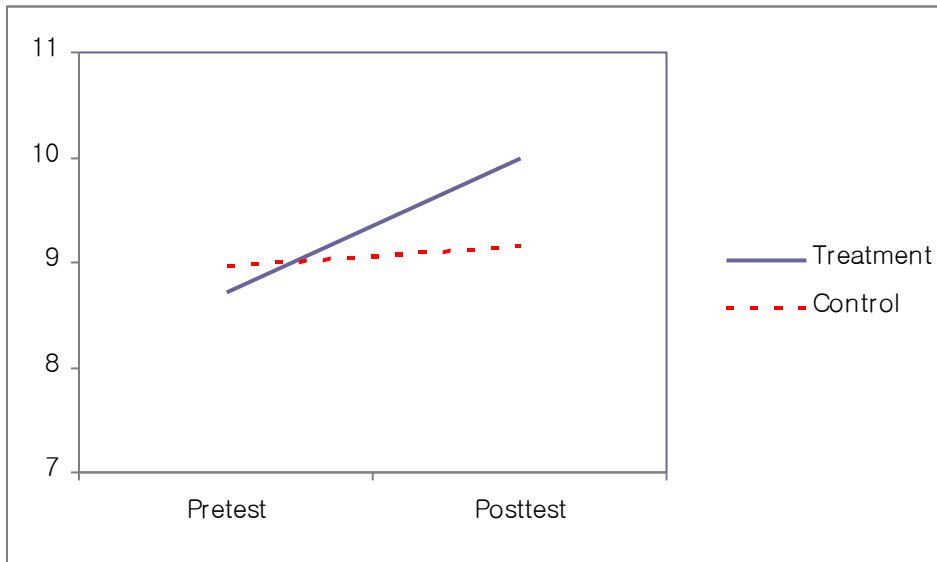
### PITCH DISCRIMINATION



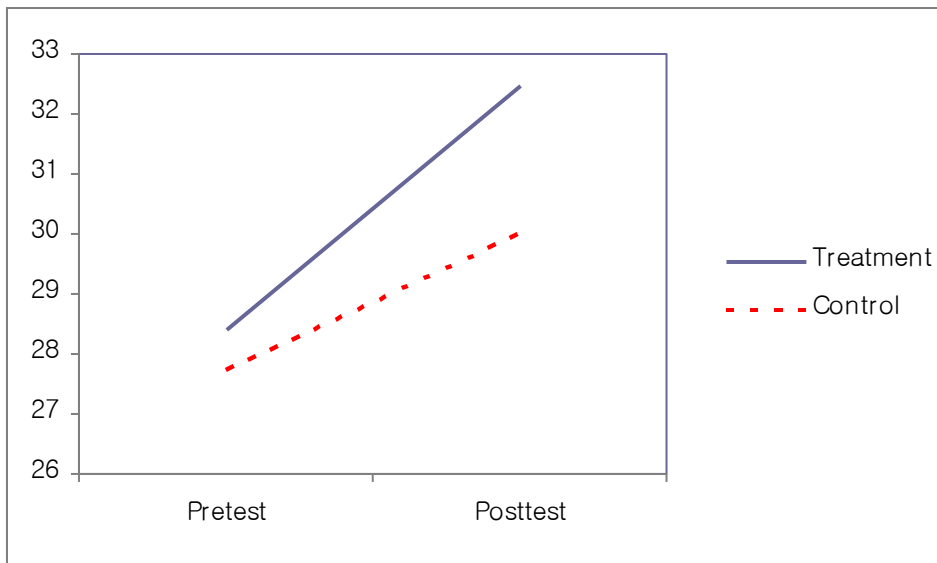
### INTERVAL DISCRIMINATION



### METER DISCRIMINATION



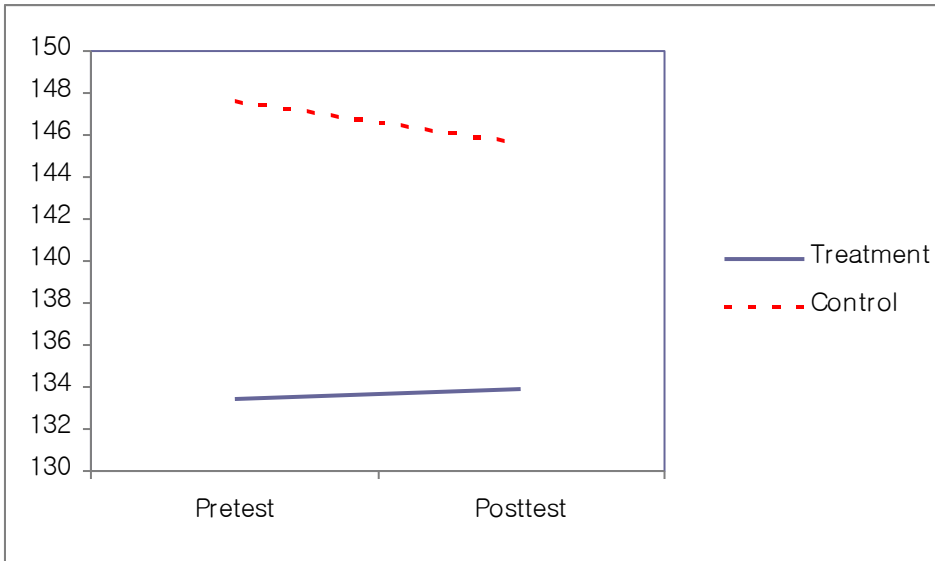
### TOTAL MUSIC ACHIEVEMENT TEST 1 + 2 + 3





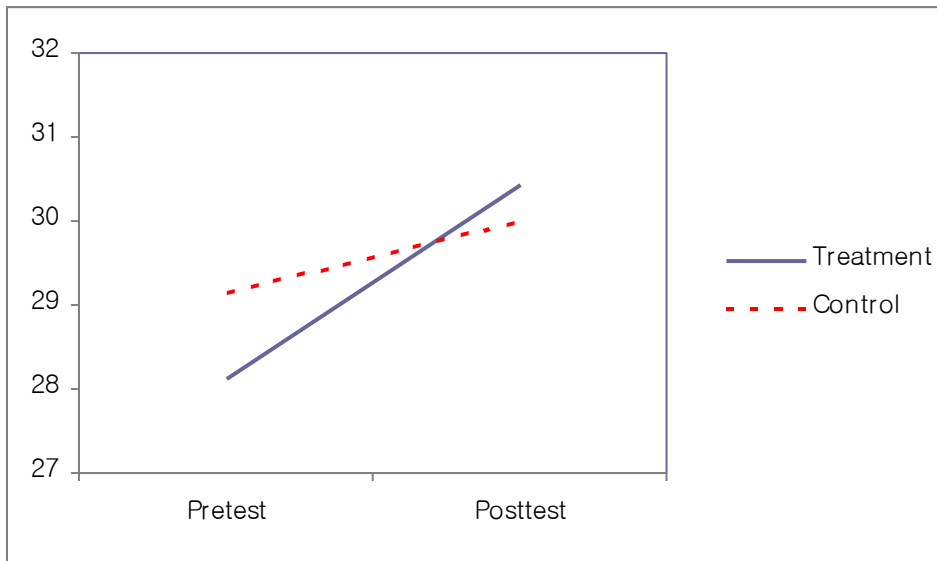
# SOCIAL DEVELOPMENT TEST LINER GRAPH

## SOCIAL DEVELOPMENT SCALE

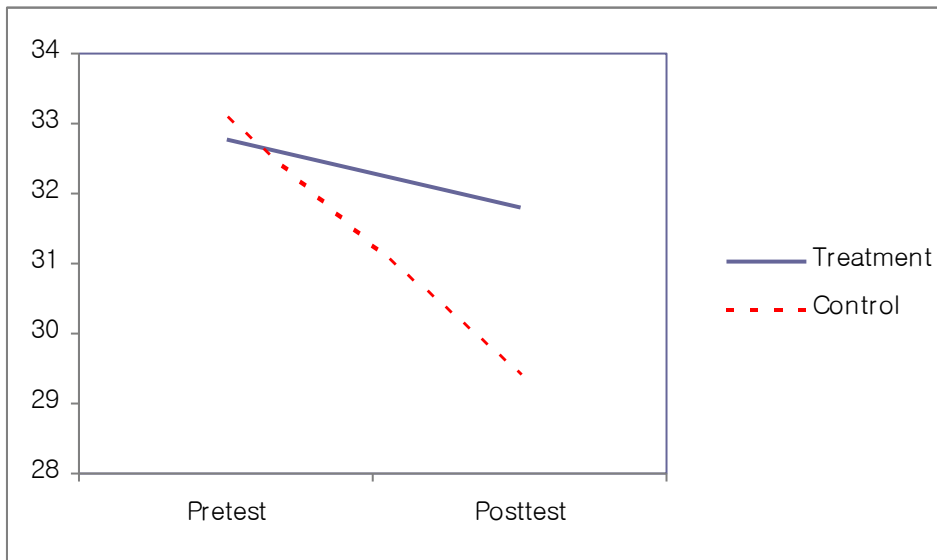


## SELF-ESTEEM TEST LINER GRAPHS

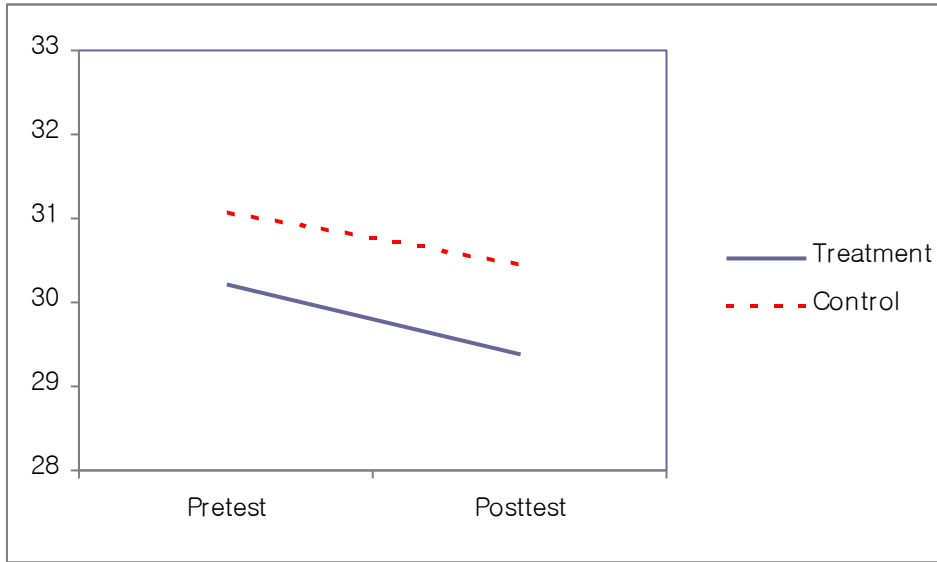
### PEER SUBSCALE



### HOME SUBSCALE



### SCHOOL SUBSCALE



### TOTAL SELF-ESTEEM SCALE

